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A

PRACTICAL TREATISE

ON

DISEASES OF THE SKIN

BY

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PREFACE

TO THE FIRST EDITION.

IN preparing this volume it has been my aim to write a concise and practical treatise, one which, while making no pretensions to being exhaustive, should comprise sufficient to afford a clear insight into the elements of Dermatology and a knowledge of the important facts in connection with each disease treated of. The primary object being to render the subject simple and intelligible, and to free it from unnecessary encumbrances, it has been deemed best to avoid scrupulously all questions of theory, discussion of unsettled points, and the introduction of obsolete terms. Consideration of these and kindred topics, however interesting, would have carried the volume beyond the limits assigned to it. Nor, for the same reason, has any attempt been made to enter into the literature of Dermatology. For information of this character, I may refer the reader to the comprehensive and sterling work of Hebra and Kaposi, the translation of which is now in course of publication by the New Sydenham Society, of London. The subject-matter, indeed, has everywhere been rigorously condensed, in many instances, I am well aware, at the sacrifice of elegance of diction.

The nomenclature employed is essentially that now in common use by the prominent writers and teachers of our own country and of Europe.

The classification of Hebra, with certain changes and modifications, has, after long and careful study, been adopted, from the conviction that when rightly comprehended it affords the most satisfactory and practically useful method of grouping cutaneous diseases with which we are familiar.

Considerable attention has been bestowed upon the definitions of the various diseases. They have for the most part been made from a clinical stand-point, with a view to their being of practical value, and consist mainly of succinct descriptions of the characteristic symptoms. In several instances, however, the subject appeared either so complex or so obscure that it was thought advisable not to attempt its definition.

* I can but incidentally refer to the fact that diseases of the skin manifest more or less variation in type as they occur in one or in another part of the world. Having had a few years ago favorable opportunities for observing a large number of cutaneous affections in the various countries of Europe, and since then of studying these diseases in the United States, I can state that in many instances they differ materially as they are seen on the two continents. Without entering into this interesting subject, it may be remarked that the diseases met with here resemble more closely those of Great Britain than those of either France or Germany. A recognition of this fact must, I think, go far in accounting for the discrepancies which exist in the descriptions of certain diseases as given by trustworthy observers.

I desire to make special acknowledgment of the assistance derived from the writings of Hebra, Kaposi, Neumann, Wilson, Fox, and Anderson.

In the sections devoted to treatment I have endeavored to mention the methods favorably regarded by dermatologists at large, but in particular to bring forward the remedies and modes of treatment which have proved of greatest benefit in my own experience.

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The illustrations of the structure of the normal skin and of the parasites are the work of my friend and co-worker Dr. Arthur Van Harlingen, to whom I cordially acknowledge my indebtedness not only for the admirable original drawings, but also for many favors tendered during the preparation of this volume. My thanks are also due to Mr. J. McCreery, proof-reader, for acceptable suggestions made during the progress of the sheets through the press.

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LOUIS A. DUHRING.

PHILADELPHIA, 1416 Spruce St.,
December, 1876.

PREFACE

TO THE SECOND EDITION.

THE present edition has been thoroughly and carefully revised, many chapters having been entirely re-written. It is also considerably enlarged, to the extent of about one hundred pages, the type being slightly smaller than in the first edition. New matter has been liberally added, and will be found upon almost every page, together with critical remarks where such seemed to be called for. The effort has been faithfully made throughout the volume to present the subject in the light of the latest dermatological researches. The forward strides of Dermatology within the past few years have been remarkable. No specialty of medicine has grown so rapidly. Formerly a decade comprised comparatively few important discoveries, but now each year adds materially to our fund of knowledge. Frequently revised editions of works on diseases of the skin, therefore, are demanded.

The chapter on the anatomy of the skin has been largely re-written, and two new illustrations have been added, one showing the general anatomy of the integument, the other the minute structure of the epidermis. Both were drawn by Dr. Van Harlingen. Considerable matter pertaining to the physiology of the skin has also been incorporated with this chapter.

The new articles are URIDROSIS, PHOSPHORESCENT SWEAT, URTICARIA PIGMENTOSA, DERMATITIS CIRCUMSCRIPTA HERPETI-

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DISEASES OF THE SKIN.

PART I.

GENERAL CONSIDERATIONS.

ANATOMY AND PHYSIOLOGY.

THE skin, or *integumentum commune*, is a covering which invests the body completely. It is a flexible membrane, and possesses both elasticity and extensibility. It also possesses considerable power of resistance. From without it resists innumerable external agencies, thus serving as a protecting organ. Upon its surface are numerous lines or markings, of various size and form, which are particularly well defined about the face, hands, and feet. Larger and coarser furrows occur about the joints, and likewise on the face and neck.

Numerous minute depressions, or *pores*, also exist upon the surface, the orifices of glandular ducts and of hair-follicles. Hairs, both coarse and fine, are found upon almost all regions of the body, but are more abundantly present in some parts than in others. The largest occur upon the so-called hairy regions; the finest upon various other localities, as, for example, the back. Upon certain parts of the integument they are wholly absent. Thus, they are not met with upon the palms of the hands, the soles of the feet, or the dorsal surfaces of the last phalanges of the fingers and toes.

To the touch the general surface of the skin in protected parts has a soft, smooth, more or less unctuous feel; in certain locali-

ties, however, especially in exposed parts, it is uneven, rough, or even harsh. In color it varies greatly, being encountered possessing all shades from whitish-pink to yellow, brown, and black, according to the race. In the individual, moreover, different shades are found in different regions. In the white race, pigmentation is most marked in the areola of the nipples and about the genitalia. In thickness it likewise varies, depending upon the locality; it is thickest on the back, buttocks, palms, and soles, and thinnest on the eyelids and prepuce.

The skin is to be considered as an organ of sensation, especially of touch, by means of which we obtain knowledge of the objects with which we come in contact. It is highly sensitive, and by it we are enabled to recognize, and moreover localize, various external impressions, as pressure, injuries, pain, and tickling; also to distinguish between heat and cold, hardness and softness, and other opposite qualities and degrees of difference. Tactile sensibility is found to vary in different parts of the body, being most acute upon the ends of the fingers.

The skin is to be viewed also as an organ of absorption. It possesses decided absorptive properties. Gases are readily taken up by dry or moist skin under favorable circumstances. In two series of experiments, conducted in 1819 and 1825 by Lebkühner, the bodies of animals were placed in sulphuretted hydrogen leaving the heads exposed, in each instance causing the death of the animal.* More recently Roehrig† has performed similar experiments upon rabbits with the same result; also, with carbonic acid gas, the animals in both cases dying of symptoms of poisoning by these gases. It is known that sulphur baths act favorably in lead poisoning by the absorption of their gaseous constituents.

Certain fluid substances, as, for example, chloroform, tincture of iodine, tar, and carbolic acid, are also absorbed. Water and watery solutions are also taken up into the system through the skin. In favor of this statement is the well-known fact that baths containing corrosive sublimate act beneficially in syphilis, the mercury being without question absorbed. Oils and ointments

* Quoted by Hillairet, *Traité théorique et pratique des maladies de la peau*, Paris, 1881, premier fascicule, p. 36.

† *Archiv für Heilkunde*, xiii., pp. 341-348.

of some kinds, as linseed and cod-liver oils, and belladonna and mercurial ointments, are also readily absorbed by the skin, and form a frequent means of acting upon systemic diseases. As an instance, the inunction of mercurial ointment in syphilis may be cited. Whether substances absorbed pass in through the general surface or only through the glandular and follicular orifices has not as yet been conclusively decided, but I incline strongly to the view that it occurs exclusively by the latter way.* Owing to the imperviousness of the corneous layer of the epidermis, the skin serves to retain moisture in the tissues beneath it, and thus prevents the too rapid evaporation of fluid from the surface.

The skin is to be regarded as a secreting organ. It secretes both sebaceous matter and sweat, which serve to give it suppleness and softness. Certain regions give out these secretions in greater abundance than others; the scalp, for instance, is well provided with sebaceous glands, and the axillæ with sweat glands. The function of perspiration is an important one, and plays a conspicuous part in the economy. When it occurs in an imperceptible manner, evaporating as rapidly as it is formed, it is termed insensible; when in excess, in the form of drops, sensible. The amount of this secretion normally poured out in the course of twenty-four hours, in the case of an adult, has been estimated at about two pounds. Roehrig† places it at one pound nine ounces troy. It varies with individuals, and depends, moreover, upon the external temperature and other circumstances. Under certain conditions, however, the amount mentioned may be greatly increased, so that in a hot air bath, for instance, as much as a pound and a half may be secreted within half an hour. Certain gases, as carbonic acid, possibly nitrogen, and other substances, are eliminated from the body, probably through the sudoriparous glands.

According to Seguin,‡ a comparison between the respiration by

* See Auspitz, Ueber die Resorption ungelöster Stoffe bei Säugethieren. Wiener Med. Jahrb., 1871. Abstract by me, Phila. Med. Times, vol. i. No. 24. Neumann, Ueber die Aufnahme des Quecksilbers durch die unverletzte Haut. Wien. Med. Wochenschrift, 1871. Also Roehrig, l. c.

† Die Physiologie der Haut, Berlin, 1876.

‡ Mém. de l'Acad. de Paris, 1790, et Annales de Chimie, t. xe. (Quoted by Roehrig.)

the skin and that by the lungs shows that the same products are given off by each organ. The amounts eliminated by perspiration and by respiration stand in a tolerably constant relation one to the other. The quantity of water thrown off by cutaneous transpiration, according to the same authority, bears the proportion to the lung transpiration of two to one. Valentin* estimates the amount as nine to five. As Roehrig states, however, the greater part of the excretion by the skin is in the form of water. The amount of carbonic acid given off during a stated time, according to Roehrig, varies in proportion to that given off from the lungs from 1:25 to 1:92. The reason the excretion by weight from the lungs appears to be so much less than that by the skin is found in the fact that the lungs are constantly absorbing oxygen. The actual transpiration through the lungs is more than double that indicated by the loss of weight. The skin absorbs only a trifling amount of oxygen, according to Gerlach† only 1:137 of the amount of carbonic acid thrown off. It will be seen, therefore, that the skin plays a comparatively insignificant part in the interchange of gaseous matter between the body and the surrounding atmosphere. This is readily explained by the density of the epidermis compared with the delicate epithelial lining of the lungs. Excretion by the skin is increased by imperfect or labored respiration, by food, and also by higher temperature.

The skin, viewed anatomically, is a complex organization. It consists of parts, some of which are essential, being everywhere present, while others exist only in certain regions. Of the former there are the epidermis, the corium, and the subcutaneous connective tissue; of the latter, which are termed *appendages*, there are sebaceous glands, sweat glands, hairs, and nails. In addition to the parts already mentioned, the skin contains bloodvessels, lymphatics, and nerves. In order to obtain a thorough comprehension of the subject it will be necessary to consider these various structures separately.

EPIDERMIS.

The epidermis, *cuticula*, or *cuticle*, is a membrane composed entirely of cells, which covers the corium in all its parts, adapting

* Repert. f. Anat. u. Phys., Bd. viii. (Quoted by Roehrig.)

† Quoted by Roehrig, loc. cit., p. 36.

itself closely to the various elevations and depressions of this structure. It is made up of the following strata: (a) Stratum corneum. (b) Stratum lucidum. (c) Stratum granulosum. (d) Stratum mucosum. Practically, however, it consists of but two layers, the corneous and the mucous, which may be separated from each other by reagents or by vesicants.

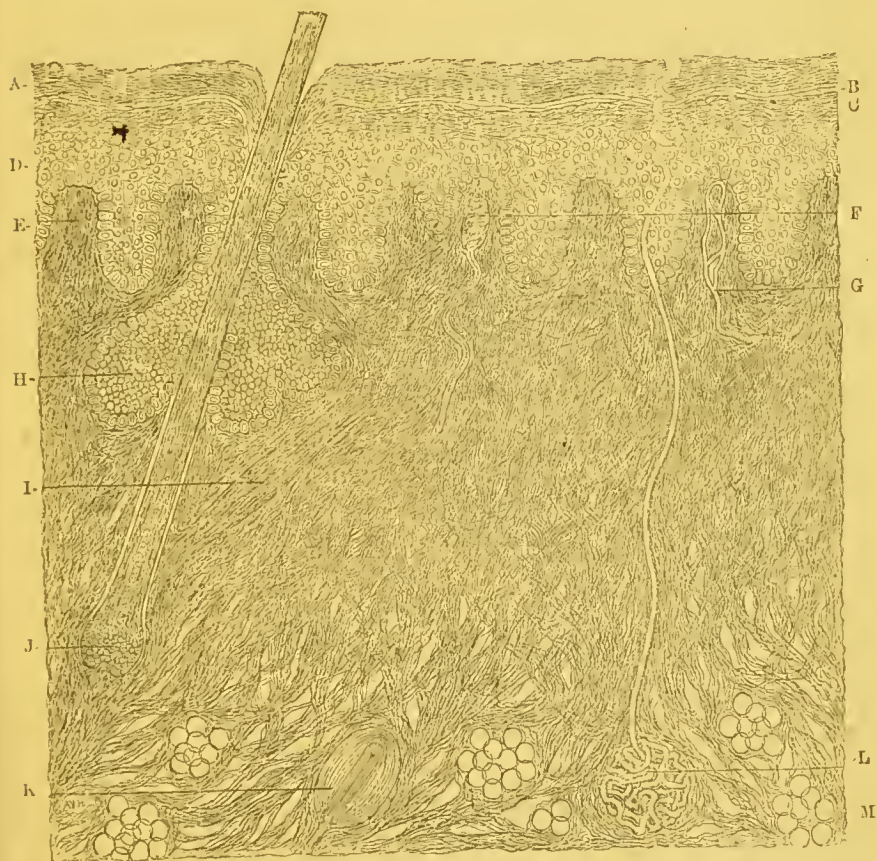


FIG. I.—DIAGRAMMATIC VERTICAL SECTION OF NORMAL SKIN. A, Stratum corneum of the epidermis. B, Stratum lucidum. C, Stratum granulosum. D, Stratum mucosum. E, Corium, with papillae. F, Tactile corpuscle. G, Papilla with vascular loop. H, Sebaceous gland. I, Erector-of-the-hair muscle. J, Hair. K, Pacinian corpuscle. L, Sweat gland. M, Subcutaneous connective tissue.

Stratum corneum—Corneous layer—Horny layer.—This is the external or superficial layer, and constitutes the uppermost part of the epidermis. It serves to protect the true skin mechanically. It follows the elevations and depressions of the tissues beneath, which gives it an undulating surface, especially marked where the papillae are well developed. It consists of variously sized and

shaped, transparent cells, closely packed in the form of strata. The cells vary according to the part of the stratum in which they are found. In the vicinity of the stratum lucidum they are more distinctly defined, succulent, and full than in the upper strata. They are polygonal or fusiform, frequently show a shrunken nucleus, and stain only faintly. Towards the surface they become flatter, drier, and more shrivelled in appearance, and stain even less markedly. No nuclei are met with here. Upon the surface they exist as dried, more or less wrinkled or crumpled cells, known as *epidermic scales*. They measure about $\frac{1}{84}'''$ (.0252 mm.).*

Detached from the tissues beneath and viewed as a whole, the horny layer is seen to be a whitish, opaque membrane, varying in thickness and density according to the locality from which it has been removed. It is thickest on the palms of the hands and on the soles of the feet. Its thickness does not depend on the development of the stratum mucosum. In some localities where this layer is thick the horny layer is thin.

Stratum lucidum.—The stratum lucidum, known also as the stratum of Oehl,* is a thin, bright, homogeneous or indistinctly striated layer composed of flattened cells containing a staff-shaped or flattened nucleus. According to Robinson,† it is made up of at least three layers of cells. The cells are formed from those of the granular layer. According to Unna,‡ in their movement to the free surface the latter become less granular and the intergranular substance grows more transparent and shining. The change begins around the nucleus, whence it gradually extends to the periphery of the cell. The nucleus, also, usually becomes invisible.§ The stratum lucidum belongs to the corneous layer rather than to the granular layer and rete.

Stratum granulosum—Granular layer.—The granular layer (of Langerhans), called also the layer of the granular cells, is a narrow stratum of flattened, granular cells, looking spindle-shaped in vertical section, with their long diameter parallel to the free surface

* Indagini di anatomia microscopica per servire allo studio dell' epidermide e della cute palmare della mano. *Annali Universali di Medicina*. Milano, 1857.

† Article on the Anatomy of the Skin, by A. R. Robinson, M.D., in *A Manual of Histology*, by Thomas E. Satterthwaite, M.D., New York, 1881.

‡ *Archiv für Mik. Anat.*, Bd. xii., 1876.

§ Robinson, loc. cit.

of the epidermis. They have a distinct clear nucleus, from the poles of which, according to Klein,* extend rod-like or disk-shaped granules, gradually diminishing in size from the nucleus outwards. The cells in this layer are no longer connected with one another by prickles or bands, as in the stratum mucosum, to be referred to. Langerhans† and Unna‡ make this layer composed of two rows of cells. Klein states that it varies in thickness in different localities, like the epidermis as a whole. In some places where the epidermis is very thick this layer is also well developed, consisting of three, four, or more layers of cells. In other places where the epidermis is very thin it is only rudimentary. The structure of the cells of this stratum is best seen in specimens stained with hæmatoxylin. The contrast between the fusiform cells of this layer and the prickle-cells of the rete below is marked, although the line of separation cannot be regarded as a sharp one. The upper border, however, against the stratum lucidum, is clearly defined.

Stratum mucosum—Mucous layer—**Rete mucosum**—**Rete Malpighii**—**Stratum Malpighii**.—This is situated beneath the granular layer. It is in direct contact with the corium, resting on the papillary layer. It is sunk in between the papillæ, as the inter-papillary projections or processes. Where these processes dip down the layer is of course much thicker than over the summits of the papillæ. The thickness of the layer as a whole varies somewhat in individuals, but it is subject to less variation in this respect than any other layer of the skin. The stratum mucosum is composed of nucleated cells, which differ somewhat in size and in shape in the several layers. Three variations may be noted. In the deepest layer, seated upon the corium, they are columnar in shape, with oval nuclei. The lower borders of the cells are elongated or pointed, and give to the border a notched or toothed appearance. The layer is fixed to the surface of the corium by the same albuminous cement-substance as that which is found between the cells. According to the observations of Robinson,§ the cells of this layer are not united to one another by bands, as in the other layers. The next several layers of cells above are

* Atlas of Histology, Phila., 1879.

† Archiv. für Mik. Anat., Bd. ix., 1873.

‡ Loc. cit.

§ Loc. cit.

well defined, and are polyhedral in shape, each with a spherical nucleus. These cells contain more or less pigment, the amount varying with the race and individual, and with the locality. Lastly, as the granular layer is approached, the cells become larger, flatter, and more granular in appearance. According to Robinson, "the granular structure, which in the lowest layer is most marked around the nucleus, gradually extends towards the margin of the cells as the surface is approached, so that finally a clear area is seen around the nucleus, whilst the remainder of the cell-body is markedly granular. At the same time the cell-body becomes firmer and the nucleus smaller."

The cells of the stratum Malpighii are closely united, and it is difficult to isolate them. This may be best accomplished by long immersion in iodized serum. In a state of isolation they resemble in outline a chestnut burr. Under inflammatory conditions the intercellular substance increases to a considerable extent, and hence the cells become more separated from one another, and the prickles, on account of their greater length, are better seen.* Wandering lymphoid cells are frequently encountered in the stratum mucosum, especially in the lower part, more particularly in certain pathological states. They are observed in the form of elongated, spindle-shaped bodies lying between the cells of the mucous layer.

The cells of the stratum mucosum are all rich in protoplasm. Following the observations of Robinson, all the cells, except those of the first row, are united to each other by filaments, the so-called prickles, or thorns, of Max Schultze, which have also been investigated by Martyn,† Bizzozero,‡ and Heitzmann.§ "These uniting filaments, or bands, vary much as regards their size and length in different parts of the body. They are most distinct wherever the Malpighian layer is well developed, but are thicker and longer in the lower rows of cells than in the upper. At the stratum lucidum they cease to exist. Between neighboring corpuscles the length of these bands is in direct proportion to the distance between the borders of the cell-bodies. Hence, where

* Klein, loc. cit.

† Brit. Med. Jour., June 26, 1875.

‡ Quoted by Heitzmann, loc. cit.

§ Sitzungs-Ber. der Kais. Akad. d. Wissensch. Wien, 1873.

three or four cells meet at one place, the minute filaments are much longer than those uniting the bodies of closely adjoining cells. Examining these prickle-cells with the microscope, alternate dark and light bands are seen between the cell-borders. With a low power, these light bands appear to consist of spaces between

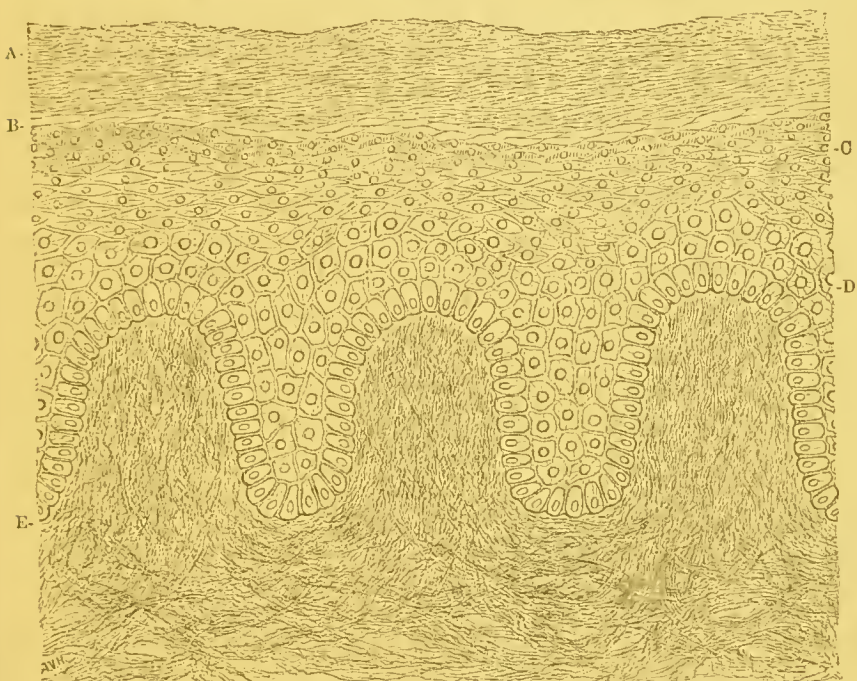


FIG. II.—EPIDERMIS AND PAPILLARY LAYER. A, Stratum corneum of the epidermis. B, Stratum lucidum. C, Stratum granulosum. D, Stratum mucosum. E, Papillary layer of the corium.

the connecting filaments, the dark lines being the connecting filaments, but with a high power the latter can be recognized as spaces between the former. The light bands can be traced from the surface of one cell to the surface of another, whilst the dark lines are the spaces between these bands. These connecting cords sometimes divide and anastomose with one another, forming a sort of net-work between the cells. In this case the dark spaces do not always extend from one cell-body to another, since they may correspond to the space between anastomosing filaments. These bands are, therefore, not the prickles of adjoining cells, which interlock with one another, but are true connecting filaments between cells of a common origin, and which have not yet become separated from one another. The connecting bands, or fibres,

gradually diminish in length and in thickness from below upwards, and finally cease to exist when the granular layer is reached. The spaces between the bands are filled with an intercellular albuminous substance, and may be regarded as minute channels for the conveyance of nutriment to the cells of the epidermis." *

The epidermis varies greatly in thickness; it is thinnest about the lips, and thickest upon the palms and soles. It is thinner on the flexor than on the extensor surfaces of the limbs. It measures from $\frac{1}{75}$ ''' (.0282 mm.) to 1''' (2.116 mm.) or more. Its surface presents a series of furrows or linear markings. Two kinds may be distinguished: a larger and deeper variety, occurring in connection with the joints and flexures of the body, and a smaller, more superficial variety, traversing the whole surface in various directions, and dependent upon the arrangement of the papillæ of the corium. The latter are to be seen upon all regions of the skin, in the form of a mosaic pattern, intersecting and forming small, polygonal spaces. Both perform a service in the movements of the body and of the skin itself. They have been made the subject of careful study, as regards their direction and special localization, by C. Langer,† Swerchesky,‡ and more recently by Oscar Simon.§

CORIUM.

The corium, called also derma, cutis, and cutis vera, or true skin, is the most important part of the integument. It is a firm structure, made up mainly of white fibrous and elastic tissue. It contains bloodvessels, nerves, lymphatics, smooth muscles, hairs, sebaceous glands, sweat-ducts, and fat cells, which are situated in the interfascicular spaces. It is divided into two portions, an upper and a lower, termed respectively the papillary and the reticular layer. These layers are not divided by any line, but pass gradually into each other. The superficial portion of the corium is raised into prominences, to be referred to, while the deep portion passes without line of demarcation into the subcutaneous connective tissue.

* Robinson, loc. cit.

† Sitzungs-Berichte der Kais. Akad. d. Wiss. Wien, 1861, Bd. xlv., xlv.

‡ Amer. Jour. of Syph. and Derm., July, 1871.

§ Die Localisation der Hautkrankheiten, histologisch und klinisch bearbeitet. Mit 5 Tafeln. Berlin, 1873.

The boundary between the stratum mucosum and the corium is marked by a pale, thin, membranous structure with oval nuclei, the so-called basement-membrane. It is conspicuous in stained preparations. According to Klein's observations, it is made up of the basis of the individual epithelial cells which has undergone a chemical and morphological change. It is to be regarded as a product of the deepest layers of the epithelium.

As stated, the corium is composed largely of fibrous connective tissue and of elastic tissue. The former is present in the form of small and large bundles, or trabeculæ, which cross one another in various directions, producing a more or less close net-work. This is dense in the upper and looser in the lower portion of the corium. The connective-tissue corpuscles are transparent cells, with oval nuclei, possessing filamentous processes. Wandering cells also are met with, especially near bloodvessels. Elastic fibres are found in all parts of the corium. They occur as fine and coarse fibres, connected by lateral branches into a net-work, their size and number, according to Klein, varying in different localities and in different individuals. They run parallel with the trabeculæ. In the lower strata they form a large net-work. According to Ravogli,* the number of elastic fibres increases with advancing years, and with this increase there is a corresponding decrease of the white fibrous connective-tissue cells.

Papillary layer—Pars papillaris.—In this layer, which derives its name from the peculiar formation of its upper surface, the bundles of connective tissue are fine and beneath the papillæ run horizontally, or parallel with the surface of the integument. The net-work is dense, and the interfascicular surfaces are consequently small and numerous. The tissue here is intricately bound together or felted.

The papillæ consist of small, firm, finger-like or nipple-like prolongations or prominences arising from the upper surface of the corium. They vary both in size and in shape, and also in number, according to the region in which they exist. They are conical or club-shaped in form, and are either single or are associated together by a common base, when they receive the name of *compound papillæ*. The largest and most perfectly developed papillæ

* Quoted by Robinson, loc. cit.

are found on the palm of the hand, upon the inner surfaces of the fingers and toes, especially on the terminal phalanges, and on the sole of the foot, where they have the form of more or less elongated nipple-shaped bodies, with circular bases. They are also large and well defined on the scalp. Upon the face they are shorter and broader. Where the skin is thin, as on the flexor surfaces of the arms and thighs, they are less developed, and in some regions exist merely as slight elevations. In size they vary, measuring upon an average about $\frac{1}{30}$ ''' (.0705 mm.).

Their arrangement likewise varies. They are, however, for the most part arranged in the form of either straight, curved, or semi-circular lines. Upon the tips of the fingers they are placed side by side in striae, two or more rows of them being included within one of the external lines of the epidermis visible to the naked eye. As O. Simon* has shown, their systemic linear arrangement depends upon the linear direction of the connective-tissue bundles. They are present in great number on the palm, sole, and matrix of the nail. Meissner† counted upon the end of the finger four hundred to one square line (2.116 mm.) of surface. According to Sappey,‡ there are about 60,000 papillæ to the square inch, which for the whole surface of the body would give 150,000,000. They may be divided into two kinds, according to their internal structure, *vascular* and *nervous*, or *sensory*. The former are well supplied with bloodvessels, while the latter are made up in great part of a peculiar tissue containing nerve elements and possess but a limited amount of vascularity.

According to Auspitz,§ the formation of the papillary layer in the embryo is subsequent to that of the epidermis. The latter about the end of the third month begins to extend downwards, pushing itself into the tissue of the corium in digital processes like fingers thrust into soft wax, forming at the same time the glands and hair-follicles.

Reticular layer—*Pars reticularis*.—The papillary layer merges into the reticular layer without distinct line of demarcation, the

* Loc. cit.

† Beiträge zur Anat. und Phys. der Haut. Leipzig, 1853.

‡ Traité d'Anatomie, t. iii. Paris, 1872.

§ Ueber das Verhältniss der Oberhaut zur Papillarschicht. Archiv f. Derm. u. Syph., 1870, p. 31.

difference between these strata consisting in the arrangement of the connective-tissue fibres. The reticular portion is looser in texture than the papillary layer, and is made up of fasciuli of connective tissue, which decussate obliquely and give it a plexiform appearance. The bundles cross one another singly or in groups, are narrow or broad, and are more or less undulating in course. As these bands of tissue ascend towards the surface, they are observed to divide and to continue dividing into smaller and finer bundles until they reach the papillary structure, where only a few of the fibres are seen to interlace. The interfasciular spaces are seen to best advantage in this layer.

The thickness of the corium varies in different regions. Kölliker* estimates it to average from $\frac{1}{8}$ ''' (.2645 mm.) to $1\frac{1}{2}$ ''' (3.174 mm.); in most localities it will be found to measure about $\frac{1}{4}$ ''' (.5290 mm.). It is thickest upon the soles, palms, buttocks, and back, and thinnest upon the eyelids, prepuce, and labia majora. It is bounded above by the mucous layer of the epidermis, and below by the subcutaneous connective tissue, into which it insensibly passes.

SUBCUTANEOUS CONNECTIVE TISSUE.

This portion of the integument is made up of variously sized, for the most part cylindrical, bundles or fasciuli, of connective tissue, which cross one another obliquely and form a net-work. The meshes, though variable in size, are generally large, and the interfasciular spaces consequently well defined. Compared with the corium it is a loose structure, and contains usually an abundance of fat. This is found to exist in large quantity about the mammary glands, palms, and soles. In some regions, however, the subcutaneous connective tissue is without fat, as about the ears and eyelids. Where the fat lobules are found in number, the layer receives the name of *adipose tissue*, or *panniculus adiposus*. J. Collins Warren† describes columnar prolongations of this tissue, or fat columns, passing in a nearly vertical direction from the adipose tissue to the bases of the hair-follicles, especially to those of the fine hairs. The condition is found where the cutis

* Manual of Human Microscopic Anatomy. London, 1860, p. 76.

† Boston Med. and Surg. Jour., April 19, 1877.

is exceptionally thick, as on the back and shoulders. The axes of these columns are parallel to those of the arrector pili muscles. Besides fat the columns contain a sudoriparous gland, and serve as channels for bloodvessels and lymphatics. From the points whence they ascend from the panniculus a cone-shaped mass of connective tissue is given off from the lower border of the cutis, which penetrates the adipose tissue for some distance, giving it a lobulated appearance. These bundles of fibres have been alluded to by French writers as *cônes fibreux*, and are the attachments of the skin to the parts below. Dr. Warren is of the opinion that these "columnæ adiposæ" afford flexibility to the dense integument and facilitate the action of the erector muscles, and that they probably play a part also in the nutrition of the upper layers of the skin and its glands; also that in disease they serve as an outlet for morbid elements pressing up from beneath, examples of which have been seen in round-celled sarcoma of the subcutaneous connective tissue, in naevi, and in carbuncle, whose peculiar appearance in the last named disease is accounted for by these structures.

The collections or lobules of fat, or fat glands, as they may be termed, consist of rounded, oval, or polyhedral fat cells closely packed together and enclosed in a net-work. The form depends upon the amount and the direction of pressure to which they are subjected. According to Ravogli,* the connective-tissue cells of this layer and also of the corium consist of branched cells which surround the white fibrous bundles and send in processes between the fibres. The elastic-tissue fibres are developed from the processes of the branched cells. Lymphoid cells are also met with in this tissue, which, according to Robinson, exist in greatest number near the bloodvessels and glands. According to Biesiadecki,† the fat cells possess a very thin membrane, containing a minute drop of oil, which keeps the membrane so tightly stretched that it is scarcely discernible during life. The fat may, however, be extracted with ether, when the thin membrane will be seen, with a round nucleus. Each fat lobule is supplied with a fine plexus of bloodvessels, and each cell is further surrounded by a delicate capillary vessel. Large bloodvessels pass through the subcu-

* Quoted by Robinson, loc. cit.

† Stricker's Human and Comparative Histology. London, 1872, vol. ii. p. 219.

taneous connective tissue, giving off branches to the corium and the structures contained within it. Pacinian corpuscles, nerves, lymphatic vessels, sweat glands, and the lower part of the hair-follicles of deep-seated hairs are also found here. Above it blends intimately with the corium, while its deeper layers are connected with the superficial fascia of muscles. The presence or absence of fat in this layer of the skin determines to some extent the external form of the body.

BLOODVESSELS.

The bloodvessels of the skin and subcutaneous connective tissue have been carefully studied by Tomsa.* Both the corium and subcutaneous tissue are highly vascular, having numerous bloodvessels throughout their structure in the form of trunks and capillaries. Two parallel horizontal plexuses exist, one superficial, in the papillary layer of the corium, the other deep, in the subcutaneous tissue. The main vessels of the corium ascend from the subcutaneous tissue, and give off branches laterally in all directions, supplying the glands and hair-follicles as well as the corium itself. Towards the papillary layer a delicate and highly-organized plexus of capillaries exists, affording an abundant supply to this region. The papillæ receive capillary loops, which run through their centre, or at their sides, parallel to their long axes. According to Thin,† the papillæ containing developed nervous structure are supplied with very fine capillary loops. Robinson states that these papillæ frequently have no bloodvessels.

LYMPHATICS.

The lymphatics of the skin have been studied by Sappey,‡ Teichmann,§ Biesiadecki,|| Neumann,¶ and more recently by

* Archiv für Dermatologie und Syphilis, Heft 1, 1873.

† Jour. of Anat. and Phys., vol. viii., 1874, p. 37.

‡ Traité d'Anatomie, t. ii. Paris, 1872.

§ Das Saugadersystem vom anat. Standp. bearb. Leipzig, 1861.

|| Untersuch. aus d. Path.-Anat. Inst. in Krakau. Wien, 1872. See also Stricker's Human and Comparative Histology, vol. ii. p. 225.

¶ Zur Kenntniss der Lymphgefäße der Haut des Menschen und der Säugethiere. Wien, 1873. Abstract by me, Phila. Med. Times, vol. iii. No. 43.

Klein,* whose careful observations I shall quote.† The skin is abundantly supplied with lymphatic vessels. Neumann demonstrated them in the papillæ, in the corium, in the subcutaneous and adipose tissues, and in connection with the hair-follicles and sebaceous and sweat glands. According to Klein, they may be divided into the lymphatics of the connective-tissue matrix; the adipose tissue; the sweat glands; the hair-follicle; and the sebaceous glands. All the layers of the corium and subcutaneous tissue contain plexuses of lymphatic vessels, whose wall is a single layer of elongated spindle-shaped or flattened endothelial plates. Many of them are possessed of valves and corresponding constrictions. The vessels of the superficial layer of the corium are, on the whole, larger than those of the next layers of the corium, while those of the subcutaneous tissue are the largest. The direction of these plexuses is for the most part horizontal, but vessels also pass obliquely through the corium. The plexuses in the several strata of the corium are denser than in the subcutaneous tissue. From the plexus of the superficial layer of the corium saccular or tubular vessels ascend into the papillæ. These either terminate with a cæcal extremity or form a compound loop. In the various strata of the corium, including the papillæ, there are fine vessels which are connected with the plexus of the corresponding layer or terminate freely either with a pointed extremity, running out into a fine canal, or with a cæcal extremity. These vessels have no valves and correspond to true lymph capillaries. Both the arterial and the venous branches are either accompanied on one or on both sides by a lymphatic vessel, or are crossed obliquely by such a vessel.

Concerning the relation of the lymphatic vessels to the interfascicular spaces and to the stratum mucosum of the epidermis, Klein is of the opinion that the lymphatic capillaries stand in an open communication, by true stomata, with these spaces, which he regards as the lymph rootlets. In the same manner the lymphatic rootlets or interfascicular spaces of the papillæ and the superficial parts of the corium are connected intimately on the one hand

* Loc. cit.

† For further information on the lymphatic system the reader is referred to the article of Dr. W. R. Birdsall, in Satterthwaite's *Histology*, New York, 1881.

with the interstitial substance of the stratum mucosum, and on the other with the lymphatic vessels.

The adipose tissue is richly supplied with lymphatics, in the form of plexuses in the interlobular connective-tissue septa and in the intralobular lymphatic vessels. The interlobular vessels are very numerous, and take up everywhere fine clefts and sinuses which are traceable between fat cells. Between the coils of the tubes of the sweat glands lymph-clefts are also found; and the alveoli of the sebaceous glands are surrounded by lymphatic spaces and sinuses, connected both with lymphatic vessels and with the interfascicular lymph-spaces of the surrounding connective tissue. The hair-follicle likewise contains lymph channels, which are in communication with the surrounding lymphatics.

NERVES.

Both medullated and non-medullated nerve fibres exist in the skin; the former terminate, as a rule, in peculiar bodies, called the corpuscles of Pacini or of Vater; while the latter, the non-medullated fibres, end as a delicate plexus in the upper layers of the corium and in the rete mucosum. In the corium some of the medullated nerves pass into non-medullated nerve fibres. Nerves accompany the more important bloodvessels. The larger nerve trunks come up from the subcutaneous connective tissue and divide at the corium, taking various directions according to the region they are to supply.

Medullated Nerves.—Under this head the tactile and Paccinian corpuscles are to be considered.

TACTILE CORPUSCLES.

These bodies are also called touch corpuscles, corpuscles of Meissner, and corpuscles of Wagner. They are elongate, ovalish, or roundish in form, and are found situated in the papillæ of the corium, or, occasionally, in the subpapillary stratum, attached to medullated nerve fibres. As a rule, they occupy the greater portion of the papillæ, and are visible in prepared sections of skin as large, well-defined, firm-looking bodies having a transversely striated or corded exterior. According to Thin, two or more corpuscles may occupy one papilla, but, as Robinson states, frequently an appearance as if two corpuscles were present is produced by a

single corpuscle having the shape of a figure 8. The intimate structure of these bodies is still involved in uncertainty. According to the studies of Langerhans* and Thin,† they consist of a mass of nucleated cells, probably connective tissue, held closely together by delicate connective-tissue fibres. A medullated nerve fibre penetrates each corpuscle, usually at its base, and winds itself with a variable course both around and throughout the interior of the structure. The mode of termination has not yet been definitely ascertained. Robinson inclines to the view that the nerve does not terminate within the corpuscle, but passes on into the rete Malpighii. They may or may not contain capillary blood-vessels. According to Robinson, the majority of the papillæ containing these corpuscles have no bloodvessels.

The number of tactile bodies varies in different regions of the body; they are most numerous upon the fingers, especially upon the last phalanges. They are found also upon the palms and soles, as well as upon other portions of the body. Meissner, who devoted much time to their study, ascertained that out of four hundred papillæ upon a square line of skin of the last phalanx of the finger, one hundred and eight were provided with tactile bodies. The same investigator states that they vary from $\frac{1}{20}$ ''' (.1058 mm.) to $\frac{1}{10}$ ''' (.2116 mm.) in length, and that they measure about $\frac{1}{40}$ ''' (.0529 mm.) in width.

PACINIAN CORPUSCLES.

Pacinian corpuscles (so named after Pacini, an Italian anatomist), also called corpuscles of Vater,‡ are large, firm, well-defined, ovoid bodies, found upon the cutaneous nerves. They occur in various regions, but are most numerous about the palms and soles, and about the fingers and toes, especially on the last phalanges. They are found typically developed and most numerous in the mesentery of the cat. They vary in size, averaging from $\frac{1}{2}$ ''' (1.058 mm.) to 2''' (4.232 mm.), and have their seat in the subcutaneous connective tissue.

Each Pacinian body is connected with a nerve trunk by means of a medullated nerve fibre, which enters the corpuscle at its lower

* Archiv für Mikroskopische Anat., 1873, p. 730.

† Jour. of Anat. and Phys., 1874, p. 30.

‡ According to Langer, they were first described by Vater.

extremity and passes through the centre of the structure, terminating in one of several ways to be mentioned. According to



FIG. III.—SECTION OF A PACINIAN CORPUSCLE (drawn according to the views of Schäfer), showing a medullated nerve fibre entering the corpuscle at its lower extremity, the capsular envelope, the core, and the central fibre.

Biesiadecki,* a bloodvessel of considerable size enters the corpuscle in the vicinity of the nerve fibre, and forms a plexus between the outer layers of the capsular envelope.

The intimate structure of the corpuscle, according to Klein and Smith,† Key and Retzius,‡ and Schäfer,§ may be regarded as consisting of three parts,—the central fibre, the core, and the capsular enclosure. The central fibre, a continuation of the entering nerve, retains a uniform calibre throughout the body until it reaches its distal extremity, where it usually becomes enlarged, terminating either in the form of an irregularly sized and shaped enlargement, or with pointed, fork-like processes. In structure it is composed of numerous fibrils, which are observed to cross one another very obliquely. The core, situated immediately around the central fibre, consists in its innermost portion of a homogeneous, non-nucleated substance. Its outer part is composed of protoplasmic cells, like connective-tissue corpuscles, each with a clear, oval nucleus. The

* Loc. cit., p. 233.

† Loc. cit.

‡ Archiv für Mikroskop. Anat., Bd. ix., 1873; see also the superb work, Studien in der Anatomie des Nervensystems und des Bindegewebes. Zweite Hälfte, Stockholm, 1876.

§ Quar. Jour. of Micros. Science, April, 1875.

capsular envelope, which surrounds the core, gives form and bulk to the corpuscle, and is made up of a great number of capsules placed in a concentric manner around a central elongated clear mass; it shows, therefore, a concentric striation, each stria corresponding to a capsule, seen in profile. Each capsule is made up of three parts: (a) a hyaline ground membrane, probably elastic; (b) in this ground membrane are embedded fine connective-tissue fibres, arranged either regularly in one or two layers, or irregularly, but always in a transverse manner; (c) on the inner surface of the ground membrane is an endothelial membrane, composed of a single layer of flattened nucleated epithelial cells. The innermost layers of the corpuscle are compactly arranged one upon the other, while the more external coats are thicker and less closely held together. Viewed as a whole, the Pacinian body is to be looked upon as one of the forms of medullated nerve-fibre termination.

Non-Medullated Nerves.—The researches of Langerhans,* Podcopaew,† Klein,‡ and others, prove that minute nerve branches containing one, two, or more nerve fibres, when approaching the surface epithelium are connected into a plexus, which is called the sub-epithelial plexus. From this small groups of minute varicose elementary fibrils come off, which lie close to the under surface of the rete Malpighii, and after having formed a net-work with large meshes—the sub-epithelial network—enter the rete Malpighii, where they ascend, always between the epithelial cells, towards the stratum lucidum. The exact mode of termination has not been definitely determined. It thus appears that a distinct nervous plexus exists between the rete mucosum and the proper laminate epithelium.

Of the vaso-motor nerves of the skin but little is known with any degree of certainty. They are probably of two varieties, those connected with the central nervous system and those connected with ganglionic plexuses in the immediate neighborhood of the skin itself. They exert an influence upon the vascular, muscular, and glandular cutaneous systems, causing increase or diminution of the circulation, as in flushing and blanching of the surface,

* Virchow's Archiv, Bd. xliv., 2 and 3 Heft.

† Archiv für Mikroskop. Anat. Bd. v., 1869.

‡ Loc. cit.

contraction of the muscles, as in *cutis anserina*, or when the hairs "stand on end," and profuse sweating, local or, more rarely, general. Each of these phenomena may arise from external influences applied to the surface, or they may be the result of internal causes, physical or emotional.

MUSCLES.

We encounter both striated and smooth muscular fibres in the skin. The former are found only in certain regions of the body, as the face. These arise from the deeper-seated muscles, pass upwards vertically or obliquely, and terminate in the corium. The smooth muscular fibres exist either as anastomosing plexuses running horizontally, as in the scrotum, or as fasciculi, as in connection with the hair-follicles, and also the perspiratory and sebaceous glands of the skin. As *arrectores*, or *erectores, pili*, or erectors of the hair, they occur in the form of bands, composed of one or of several bundles, which arising from the internal sheath of the hair-follicle, pass obliquely upwards, below, and around the sebaceous gland, and terminate in the upper part of the corium. The evacuation of the sebaceous glands is doubtless performed by the contraction of these muscles. Many hairs possess two muscles, which pass around on either side of the gland.

The muscles of the skin exist quite generally over the body, and are found to be highly developed upon the scalp, scrotum, and penis. The investigations of Kölliker show that they are arranged in circular layers about the areola of the nipple, becoming more marked from without inwards as far as the base of the nipple. In the nipple they form a close net-work. Contraction of these muscles causes the condition known as *cutis anserina*, or "goose-flesh."

PIGMENT.

The general coloration of the skin depends upon a deposition of pigment, or coloring matter, in the cells of the mucous layer of the epidermis. One or more strata of the mucous layer may be the seat of pigmentation. It consists in a slight staining of the cells themselves, with a more intense coloring of the nuclei, and also in the presence of fine granules of pigment in the cells, appearing as a dark line above the papillary layer of the corium.

The color of the skin varies from white to black in different races. It also varies from a light to a dark shade in different individuals of the same race, giving rise to the hue of persons designated blondes and brunettes. In certain regions of the body the skin is always relatively darker in color; as upon the scrotum, labia majora, perineum, nipples, and areolæ. This difference is due simply to an increase in the amount of the ordinary pigment, which is found to be largely developed in these localities. In the white race the pigment cells are for the most part yellowish-white in color, which, together with the vascularity of the corium, gives the peculiar pinkish flesh tint of the skin. In the colored races the pigment layer is very highly developed, the whole of the mucous layer being more or less stained. The deepest strata of cells are always the most intensely colored. In these cases the horny layer of the epidermis is also somewhat darkened in hue.

SWEAT GLANDS.

The sweat, or sudoriparous, glands (*glandulæ sudoriferæ*) are convoluted bodies, situated in the subcutaneous connective tissue. They are simple tubular glands, coiled into a more or less globular form, surrounded and held together by loose connective tissue, and open on the surface of the skin by means of a narrow canal, called the excretory duct. This duct begins at the gland and ascends in a perpendicular or oblique direction through the skin and epidermis, with a straight or slightly wavy course, passing between the papillæ of the corium, and opening out upon the surface of the epidermis. Where the epidermis is thick, as it enters and passes through the horny layer it inclines to assume a spiral course. In other places it is only slightly spiral or straight. It finally terminates in a funnel-shaped aperture, or pore. Upon the palms and soles the pores are quite large, and can at times be seen with the naked eye. The ducts vary in length according to the locality of the gland. The gland itself is a small, roundish body, yellow in color, varying in size as it occurs in one region or another of the body. In the axilla, where they form an almost continuous layer under the corium, they are found to be larger than anywhere else, and attain a diameter of $\frac{1}{2}'''$ (1.058 mm.) to $1\frac{1}{2}'''$ (3.174 mm.). In other portions of the body they measure about $\frac{1}{6}'''$ (.3526 mm.). The length of the untwisted tube has been

estimated* to average about one-fourth of an inch, which would give a total length of over forty thousand feet, or nearly eight miles, of perspiratory tubing.

They exist, according to Hörschelmann,† in all parts of the skin. According to Klein and Robinson, they are absent on the glans penis and on the margin of the lips. In most regions they are uniformly distributed. They are very numerous, their number being estimated by Krause as 2,381,248.‡ Taking the whole surface together, the average number of the glands is 1000 to the square inch; but they vary greatly in different parts of the body, counting from 417 to the square inch on the neck, back, and buttoek, where they are least plentiful, to 2685 on the sole of the foot and 2736 on the palm of the hand. They are extensively supplied with bloodvessels, which envelop them completely in a reticular manner. Muscles are found in connection with all perspiratory glands, except, according to Hörschelmann,§ those of the scalp.

The duct of the gland, following Klein, consists of a narrow canal, lined with a bright homogeneous or nucleated membrane staining well in carmine; upon this is found the epithelium, composed of two or three layers of small polyhedral epithelial cells each with a spherical or oval nucleus. Outside of this exists a delicate membrana propria. The lumen of the duct is distinct and is in most places cylindrical. About one-third or one-fourth of the coiled tube retains the same structure as the excretory duct; but the remainder, or the distal part, is of a different nature, the lining membrane of the lumen being reduced to a very delicate film. The epithelium, which in the duct consisted of two or three layers of small polyhedral cells, is here replaced by a single layer of columnar, longitudinally striated cells, each with a spherical nucleus in the outer part of the cell. The membrana propria of this section is, however, much thicker than in the former, and contains on its inner surface, that is, the one next the epithelial cells, a single and continuous layer of very slender unstriated muscle cells arranged parallel to the long axis of the tube.

The diameter of the tube of the gland is, as a rule, greater than

* Piffard, *Diseases of the Skin*, New York, 1876, p. 15.

† Inaug. Diss., Dorpat, 1875. Cbl. f. Med., No. 11, 1876.

‡ Kölliker, loc. cit., p. 125.

§ Loc. cit.

that of the duct, and in some localities, as in the axillæ, palms, and soles, becomes greatly developed. In addition to the connective tissue holding the coils of the gland together, numerous capillary bloodvessels, lymphatics, and a few fat cells are found here.

The sweat glands in the earliest stages, according to Klein, are solid projections of the stratum mucosum into the corium. According to the views of Heitzmann,* however, they are elongations of the outer epithelial layers downwards into the corium. This takes place about the fifth month of foetal life. Later these rudiments grow into the subcutaneous tissue, where they begin to coil, this occurring between the seventh and ninth months.

According to Rochrig,† there are no nerves connected directly with the sweat glands. The secretion is forced out by means of contraction of muscles situated about the glands, or, in the case of the smallest glands, which have no muscles, by the general muscular contraction of the skin.

The secretion of the glands varies in quality according to their size and situation. The smaller ones give forth a clear, transparent fluid, while the larger ones produce the same fluid together with fat cells and numerous fine granules with free nuclei.‡ This latter product is to be regarded as coming from the walls of the gland tubes. As the rete Malpighii contains a large quantity of fluid, and the horny layer, properly so called, is very coherent, these layers derive nothing from the perspiration; but the most superficial layer, the pulverulent furfuraceous or porous horny layer, collects a large quantity in its interstices. The perspiration, as it reaches this point, resembles a river lost in the sands, nearly all the fluid disappearing.§ It is this fact which causes the perspiration given off under ordinary circumstances to remain insensible to the eye, and it is only when this secretion is poured out very abundantly that it wells up to the surface in distinct drops.

Sweat has a peculiar odor, varying in different parts of the body and in different individuals, a saline taste, and usually an acid reaction. Trümper and Luchsinger|| have come to the con-

* Loc. cit.

† Loc. cit., p. 65.

‡ Kölliker, loc. cit., p. 127.

§ Küss and Duvall's Physiology, Amer. edition.

|| Pflüger's Archiv, Bd. xviii., p. 494.

clusion that it is in itself really alkaline, the acid reaction usually found on applying litmus paper to the skin being due to decomposition of the sebaceous secretion. Unna,* on the other hand, considers it a mixed fluid, derived from different sources, its reaction varying according to its composition, the view which appears to me to be the most plausible. Its reaction, however, is variable, depending on circumstances. As Unna states, it has not been shown that the sweat which exuded from sweat pores comes exclusively from the sweat-coils. The watery element of the sweat must in part be drawn from bloodvessels of the papillary layer; perhaps also from those surrounding the duct, and from the rete, there being, according to Unna, free communication between the inter-epithelial spaces of the prickle-cell layer and the lumen of the duct. It is composed almost entirely of water, containing less than two per cent. of solid materials, of which two-thirds consist of organic substances. The inorganic solids are composed chiefly of the chlorides, sulphates, phosphates, and carbonates of potassium and sodium, with earthy phosphates. Ammonia is probably not present in sweat except as a product of decomposition. The organic constituents of sweat, as stated by Rochrig, are chiefly urea, and formic, acetic, lactic, and possibly other organic acids. To the presence of these acids is due the peculiar odor of the secretion. In addition, the neutral fats margarin and stearin and also cholesterolin are present. It is classed as an excremential fluid by Robin and other physiologists. In particular diseases the sweat may become variously colored, as in chromidrosis; or impregnated with different organic matters, as urea (in uridrosis), albumen, bile, sugar, etc. Certain substances introduced into the blood are excreted by the perspiration. Such, for example, are iodide of potassium, and benzoic, succinic, and tartaric acids. The amount of sweat excreted is often in inverse proportion to the amount of urine carried off by the kidneys. That these glands frequently aid and relieve the kidneys admits of no doubt. The perspiratory secretion is also to be viewed in the light of a regulator of the temperature of the body by its evaporation upon the surface.

The secretion of sweat has received attention at the hands

* Brit. Med. Jour., Oct. 1, 1881.

of Adamkiewicz* and Unna.† The former investigator regards sweating as a bilateral symmetrical nerve function, and believes that the glands belong to the same category as the salivary and lachrymal glands. Nerve physiology has shown that the secretion is independent of blood pressure and of the rapidity of the circulation, but not of the circulation as a whole. The most plausible theory, as Unna states, is that derived from a vaso-motor and musculo-motor hypothesis, which explains the action of the involuntary muscles connected with the gland, the remarkable transitions between fatty, mucoid, and pigmented sweat, and cold sweat.

SEBACEOUS GLANDS.

The sebaceous, or sebiparous, glands (*glandulæ sebiparæ*) are situated in the corium, never being found as far down as the subcutaneous connective tissue. In connection with large hairs they lie about on a level with the middle third of the hair-follicle. They are met with upon all portions of the body. They are absent on the palms of the hands, soles of the feet, dorsal side of the last phalanges of the digits, and the glans penis. As a rule, they are connected with the hair-follicles, into which they empty their secretion. With large hairs this takes place at an acute angle at the neck of the follicle. In certain localities, where the glands are large, as the labia majora, prepuce, corona of the glans penis, scrotum, and nostrils, the ducts of the glands open upon the surface of the epidermis. When of small size, the glands appear as a growth from the hair-follicle to which they are attached. When of large size, the hair would seem to be an appendage of the gland. Their size is variable, being from $\frac{1}{10}$ ''' (.2116 mm.) to 1''' (2.116 mm.) in diameter. The largest are those of the eyelids (Meibomian glands), nose, cheeks, scrotum, labia, and about the anus. Large glands also exist abundantly in the scalp, each hair being, as a rule, supplied with two glands. About the scrotum, pubes, mons veneris, and labia majora, they are even more numerous, as many as four or six often being connected with one hair.

They consist of a gland proper, or the secreting portion, and an excretory duct. The gland itself is an acinous, or racemose

* Die Secretion des Schweisses. Berlin, 1878.

† Abstract in Brit. Med. Jour., Oct. 1, 1881.

one, being made up of a variable number of lobules. Robiuson gives the formation and minute anatomy of the gland as follows. The gland proper is formed of a basement-membrane, or sac, externally, and secreting cells, or their products, internally. The basement-membrane is continuous with the transparent membrane described as lying directly beneath the rete Malpighii and above the corium, and has a similar structure. This basement-membrane passes from the sebaceous gland to the hair-follicle, where it forms the inner layer of the hair-sac. The membrane of the sebaceous gland is surrounded externally by bands of dense connective tissue containing bloodvessels, nerves, and lymphatics. The secreting part of the gland is composed of layers of cells similar to the cells of the epidermis, those of the outer part corresponding to the cells of the rete mucosum. The first layer of cells, or that seated upon the basement-membrane, is made up of distinctly nucleated cylindrical cells, like those of the rete. Farther inward the cells are larger, polyhedral in form, and contain fat which conceals or obscures the nucleus. If the fat, however, be extracted, the nucleus can be seen. The nearer the centre of the gland, the greater the amount of fat in the cells. In the centre of the gland free fat, fat crystals, and the remains of epithelial cells are found.

The structure of the duct is similar to that of the gland. Externally is the basement-membrane, lined inside by epidermis-like cells, containing more or less fat, and enclosing a central cavity, or canal, through which the sebum flows. Internal to the polyhedral cells of the duct are the cells of the corneous layer of the epidermis, which diminish in number as the free surface is reached. The formation of the gland begins at the third month of foetal life, as a projection downwards and outwards of a part of the external root-sheath of the hair, at the point of the future opening of the duct.

The product of the secretion of the sebaceous glands is known as *sebaceous matter*, or *sebum*. It consists of an oily, semi-fluid, amorphous substance. In chemical composition it is found, according to Rochrig, to be composed of about 50 per centum of fatty matter (olein and palmatin), which is oily at the ordinary temperature of the body, but hardens into a tallow-like substance on exposure to the air. It is always mixed with numerous cells

derived from the walls of the glands in a state of fatty degeneration. Besides this, there are in addition a certain quantity of saponified fats, some cholesterolin, extractive matter, an unknown albuminous substance, earthy phosphates, alkaline chlorides, and phosphates. Soluble salts are present only in the smallest quantities.

It is impossible to estimate the entire amount of the secretion of the sebaceous glandular system. The uses of this product of the glands are manifold. It serves to give softness and pliability to the skin and to the hair. It prevents too rapid evaporation from the general cutaneous surface and the consequent effects of sudden changes in the temperature of the body. At the same time it hinders too rapid desquamation of the epidermis, as well as injurious maceration of this layer of the skin by the perspiratory secretion. Thus, we find that in the axilla, where the sweat glands are active, the sebaceous glands are present in unusual numbers. Upon the palm and sole, where the sebaceous glands are absent, the sweat glands appear to secrete, as Roehrig states, a certain amount of oily matter together with the perspiratory fluid.

HAIRS.

Hairs are fine, long, rounded, compact bodies, having their seat in depressions in the skin, the so-called hair-follicles. Three kinds of hair are recognized: long hair, as that of the scalp; short, thick hair, as that of the eyebrows; and very fine, soft hair, called *lanugo*, found upon the face, trunk, and other regions.

In considering the hair we distinguish two portions, namely, the *shaft*, which is free, and protrudes beyond the surface of the skin, and the *root*, the part contained within the skin. The shaft is usually long and straight, tapering off to a point as it approaches its end, while the root is found to be thicker and to terminate in a bulb-shaped expansion, termed the *hair-bulb*. The root of the hair, within the follicle, consists of the hair-substance, the cuticle, and the inner root-sheath. In minute structure the hair consists of the hair-substance and the cuticle; another portion, the *medullary substance*, may also be mentioned, although its presence is not constant.

The *hair-substance*, termed also *cortical substance*, constitutes the bulk of the hair, and is composed of a number of long, narrow,

spindle-shaped filaments or bundles, longitudinally striped, containing pigment granules, which give it a punctate appearance. These filaments are further made up of long, faintly nucleated cells, or scales, which adhere so closely together as to be separable only by the employment of caustic alkalies or strong acids. Between these scales, in colored hair, rows of minute pigment granules, varying in color and in quantity, are found. When not abundant, these pigment granules are not contained in the scales, but in the interstitial substance between them. In addition to the pigment granules the scales are diffusely pigmented. In white hairs the hair-substance is without pigment, and is transparent, and, according to Klein,* contains between the hair scales the finest air-bubbles. According to the views of Heitzmann,† the hair is to be regarded as a solid elongation of the internal root-sheath, the external root-sheath taking no part in its formation.

The *hair-bulb*, or root proper, surrounds the hair-papilla at the base of the follicle. It is a loose, spongy structure, and is composed of nucleated cells similar to those found in the deep strata of the mucous layer of the epidermis. Small granules, either colorless or pigmented, according to the color of the hair, are present, and give the structure a speckled appearance. At the point where the hair-bulb joins the straight portion of the root, the cells composing the bulb pass imperceptibly into the fibre cells of the cortical substance.

The *cuticle* is a very delicate membrane, which completely invests the hair-substance and serves to bind its bundles more firmly together. It ensheathes both the shaft of the hair and the root. It begins on a line with the neck of the papilla. The cells are at first round, then larger and columnar, with large and distinct nuclei, and finally in the root and shaft elongated, thin, and imbricated, and without nuclei. Upon the shaft, where the cells overlap one another, it presents a reticulated, serrated appearance, not unlike that of the scales upon a fish. When treated with alkalies it becomes detached from the hair-substance, and consists of flat, transparent cells, or scales, without nuclei. They are analogous to the cells of the horny layer of the epidermis, and serve a like purpose.

* Loc. cit., p. 319.

† Chicago Med. Jour. and Exam., Dec. 1881.

The *medullary substance*, or *medulla*, is wanting in some hairs. It is usually present in the short and thick hairs, as well as in the long hairs of the scalp; it is absent in lanugo. When present

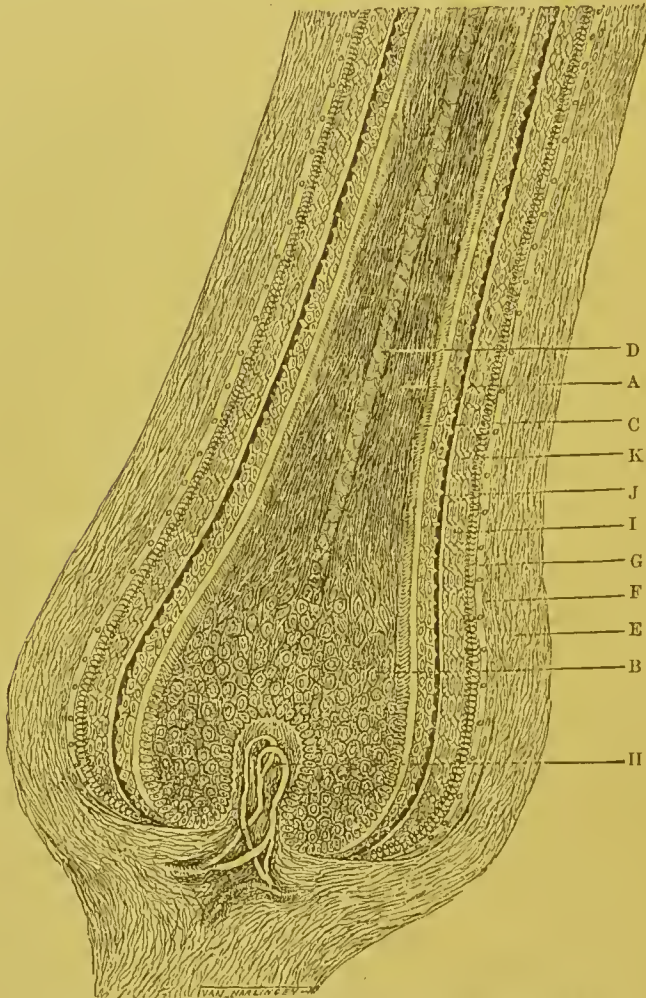


FIG. IV.—THE HAIR AND THE HAIR-FOLLICLE. A, Shaft of the hair. B, Root of the hair. C, Cuticle of the hair. D, Medullary substance of the hair.

E, External layer of the hair-follicle. F, Middle layer of the hair-follicle. G, Internal layer of the hair-follicle. II, Papilla of the hair. I, External root-sheath. J, Outer layer of the internal root-sheath. K, Internal layer of the internal root-sheath.

it is seen as a broad, colored line or cord, running longitudinally through the centre of the hair, commonly extending throughout its whole length. In structure it consists of one, two, or three rows of cells, polyhedral or oblong in shape, containing spherical nuclei and fatty granules. They may be seen to advantage with

the aid of strong alkalies or strong acids. Minute air-vesicles are frequently found in the medullary substance. According to Klein, they exist here normally, appearing black in transmitted light.

HAIR-FOLLICLE.

The hair-follicle is an elongated sac, dipping down into the corium and subcutaneous connective tissue, for the accommodation of the hair. It is to be viewed as a continuation of the papillary layer of the corium. It is cylindrical in form, tending to enlarge at its lower extremity. Its upper portion, termed the mouth, is funnel-shaped, and opens directly upon the free surface. Immediately below this is a constriction, called the neck, which is the narrowest part of the follicle. This is just below the level of the papillary layer of the corium. The duct of the sebaceous gland enters at this point. The follicle now enlarges somewhat, constituting the body, and finally terminates in a bulbous extremity accommodating the hair-papilla and the bulb of the hair. The hair-follicle is always placed more or less obliquely in the skin, usually in the form of a straight line, but it is sometimes slightly curved, as on the lips and eyebrows.

The calibre and the length of the hair-follicles vary greatly in different regions and localities. They average from 1''' (2.116 mm.) to 3''' (6.348 mm.) in length. Upon the scalp they are likewise variable as to size, and occur in groups of three or four. The hair-follicle contains the hair and the external and internal root-sheaths.

According to Heitzmann,* the horny layer of the epidermis, which proceeding downwards results in the formation of the internal root-sheath, upon entering the follicle is at about the middle of the follicle gradually reduced to not more than two strata. Near the bottom of the follicle the inner root-sheath gains in width, and is composed of three or four strata of epithelia, which have now lost their horny character and have become of a protoplasmic nature again. The rete mucosum enters the follicle in its full width, but gradually becomes composed of a smaller number of epithelia, which retain their original protoplasmic character, and near the bottom of the follicle completely disappear. In

* Chicago Med. Jour. and Exam., Dec. 1881.

structure it consists of three layers, the external, the middle, and the internal.

The *external layer* (termed by Kölliker the *external fibrous coat*) determines the form of the follicle; it is the most important and thickest layer, and consists of connective-tissue fibres which run parallel with the course of the hair, blending above in the papillary layer with the fibres of the corium, and terminating below, around the hair-bulb, in the form of an ovate prolongation into the subcutaneous connective tissue. The external portion of the layer merges into the surrounding connective tissue. It is supplied with an artery, a vein, and a medullated nerve fibre.

The *middle layer* (the *internal fibrous coat* of Kölliker) is less extensive than the external layer, and is made up of transverse connective-tissue fibres, with oval nuclei, embedded in a granular substance. These latter are regarded by Klein and Heitzmann as cross-sections of smooth muscle fibres. They are seen to best advantage about the bulbous portion of the follicle. Bloodvessels, in the form of a close net-work of capillaries, have been found here, but as yet no nerves.

The *internal layer* (called also *hyaline* or *vitreous membrane*, and *structureless membrane*) is not acted upon by either acids or alkalies. It is a homogeneous, transparent tissue. Its outer surface is smooth; its inner surface is marked with delicate transverse lines. Although homogeneous on section, it shows, according to Biesiadcki, when viewed on the flat surface, transverse, oblique, decussating fibres, together with ill-defined nuclei. It is thin near the mouth of the hair-follicle, increases in thickness towards the distal part, reaching its greatest thickness near the bulbous extremity, and becomes again thinner as it approaches the papilla. Over this latter it exists only as a very delicate membrane. It is a direct continuation of the basement membrane of the corium. It is without bloodvessels or nerves.

At the base of the follicle rises the *hair-papilla*, an ovate, club-shaped or spherical, well-defined body, about $\frac{1}{15}'''$ (.1410 mm.) long, which protrudes into the hair. It has a narrow neck and a thicker body. It is about twice as long as it is broad. It springs from the connective tissue of the follicle, and consists of connec-

tive tissue together with round nuclei and nucleated cells. It is separated from the root of the hair by the internal layer of the hair-follicle. It contains one or more arteries, veins, and also non-medullated nerve fibres.

There are two *root-sheaths*, an external and an internal; they are made up of a number of layers.

The *external root-sheath* is simply a continuation of the mucous layer of the epidermis, which extends down the hair as far as the bulb. It is composed of stratified epithelial cells, the outermost layer being columnar. As it approaches the bulb the rows of cells become fewer, and the layer consequently narrower, finally terminating in a single row of columnar cells. The last, or single, row of cells is columnar in form, being the continuation of the outermost layer referred to. It disappears at the beginning of the bulb. On the outside it adjoins the vitreous membrane of the follicle, which membrane, or layer, also above separates the external from the internal root-sheath. Langerhans claims to have found nerve structure here, the same as in the mucous layer of the epidermis.

The *internal root-sheath* is traced from the orifice of the hair-follicle downwards, and is composed of two epidermal layers, an outer layer (known also as Henle's sheath) and an inner layer (called Huxley's sheath). Following the observations of Heitzmann,* at the bottom of the hair-follicle the inner root-sheath becomes wider, turns over, surrounds the papillæ, and constitutes the bulb of the root of the hair. Later, it forms the root and then the shaft of the hair. The innermost layer of the inner root-sheath by reflecting results in the formation of the cuticle. The cells of the lower portion of the inner root-sheath are coarsely granular, indistinctly nucleated, and elongated. Farther up they are finely granular, pale, with indistinct nuclei. The cells of the outer, or Henle's, layer, lose their nuclei sooner than those of the inner layer, and are polyhedral or elongated, highly-refractive looking bodies. Farther up the root the cells of the two layers—Henle's and Huxley's—become indistinguishable. The cells now have the character of horny epithelia.

Concerning the shedding of the hair, it may be stated that the

* Loc. cit.

young hair is formed around the old papilla. At a certain distance above the papilla there appears a club-shaped thickening, which corresponds to the bulb of the hair being cast off. According to Heitzmann, the new growth of a hair takes place within the province of the internal root-sheath exclusively. As was first suggested by Biesiadecki, the smooth muscles also play a part in the shedding of the hair, their contraction causing a neck to be formed around the young hair.

Hairs occur upon all parts of the body, except the palms and soles, eyelids, backs of the last phalanges of the fingers and toes, lips, and inner surface of the prepuce and glans penis. They are seated in the skin in a more or less oblique direction, varying with the region of the body. They vary both in thickness and in length, according to locality: they are shortest and finest in the delicate lanugo found upon the face and trunk, and longest and coarsest upon the scalp and beard. The number of hairs upon the body likewise varies considerably in different localities; also in different individuals. As a rule, the lighter the hair in color the more numerous will they be found. Wilson* calculates the number of hairs of the scalp to be about one thousand to the square inch, or one hundred and twenty thousand to the whole scalp; other calculators make the number less. The difference depends upon the number of follicles present; also upon the number of hairs arising from each follicle. As a rule, there is only one hair in each follicle, but often there are two. The direction of the hairs for the different regions has been elaborated by Voigt.† They run in peculiar lines and curves, which in certain places, as on the crown of the head, form circles, segments of circles, or "whirls." The cause of this plan of arrangement is found in the direction of the bundles of connective tissue of the corium, as has been shown by Tomsa.‡

The general color of the hair varies extremely in different races and in individuals. It depends upon the presence of pigment in the hair-filaments, in the form either of granules or of a diffused coloration. It is also influenced by the presence of minute air-

* Lectures on Dermatology. London, 1878, p. 99.

† Quoted by O. Simon, loc. cit., p. 19.

‡ Loc. cit.

vesicles, which may occur, Biesiadecki thinks, either between the cortical and medullary substances or in their interior.

Hairs are remarkably elastic, and admit of great extension; they are also very strong, and are capable of supporting considerable weight without breaking. When cut, they grow again until they have assumed their determinate length. The rate of the growth of the hair of the head is about six lines a month. It grows more rapidly in youth than in age, and in summer than in winter. Frequent cutting of the hair promotes its growth, as has been shown by Berthold, and more recently by Moleschott.* Hairs absorb and give off water readily; they also take up fatty and oily substances. In structure they contain no bloodvessels; they are nourished from their papillæ. In chemical composition they consist of a nitrogenous substance containing sulphur, fat, pigment, and mineral salts. They retain their characteristics for a very long time, and are the last portion of the body to give way to decomposition.

NAILS.

The nails are hard, horny, elastic, transparent structures, which are embedded in the skin upon the last phalanges of the fingers and toes. They are rounded or quadrilateral bodies, and are curved from side to side. They have four borders, one of which only, the anterior, is free; the posterior and lateral borders are sunk in the flesh. The posterior portion of the nail, situated in the skin, is termed the *root*, while the exposed part is called the *body*.

Around the lateral and posterior borders of the nail, at the point where the skin joins the nail, there exists a well-defined groove, called the *nail-groove*. The corium upon which the nail rests is called the *bed* or *matrix*; it corresponds in form to the nail, to which it is closely adherent. The matrix is a part of the corium, and presents peculiar ridges, upon which are seated the papillæ, directed somewhat forward. It is a dense tissue, containing an abundance of elastic fibres and but little fat. The bloodvessels form a plexus in the upper part of the corium, supplying the papillæ, and also a finer plexus in the lower portion, devoted to the matrix itself. According to Biesiadecki,† numer-

* Untersuchungen zur Naturlehre, Bd. xii.

† Loc. cit., p. 260.

ous medullated nerve fibres lie in the subcutaneous tissue of the nail-bed, which, losing their medullary sheath at about the level of the corium, run vertically to the surface. A defined, whitish substance, surrounded anteriorly by a convex line, is usually present in the matrix, just in front of the posterior groove. It is crescentic in shape, and is called the *semilunula* or *lunula*.

In structure the nail must be regarded as modified epidermis. Like it, it is divided into two layers, a horny and a mucous layer. The former constitutes the greater portion and substance of the nail, forming its exterior as well as its free edge. The surface is smooth and glistening, and contains longitudinal striæ, which are parallel, running from the root to the free edge. In order to study the intimate structure of the nail it is necessary to employ strong acids or strong alkalies. It is then found to be made up of numerous closely connected plates, which may be further resolved into polygonal, flat cells, resembling those of the horny layer of the epidermis.

The nail, like the hair, grows more rapidly in summer than in winter. It also grows more rapidly in children than in adults. It begins to form in the third month of intra-uterine life, and at the eighth month is well developed.

SYMPTOMATOLOGY.

Diseases of the skin exhibit themselves in the form of symptoms, which are either of an objective or of a subjective nature. Objective symptoms are those which consist of certain appearances which manifest themselves upon the surface, and are for the most part the result of structural alteration in the tissues. They comprise the external forms of disease, and are consequently capable of ocular demonstration. Here are found both the primary and the secondary lesions. Subjective symptoms, on the other hand, relate to sensation, of which the patient alone is able to take cognizance.

In addition, symptoms involving the general economy, as manifested, for example, through the vascular or nervous system, must be referred to. Thus, certain acute and grave maladies are accompanied by more or less fever, general debility, or marasmus; in other instances disordered digestion or menstruation, or functional disturbance of other organs, is noted; while sometimes organic disease is found to exist. All symptoms, indeed, of whatsoever character, should in each case receive attentive consideration.

OBJECTIVE SYMPTOMS.

Under this head are to be studied the various lesions which occur in the skin. They are numerous, and are, moreover, capable of undergoing many modifications. They may be divided into those which show themselves as primary forms of disease, termed primary lesions, and those which exist either as the result of primary lesions or from other causes, designated secondary lesions. The importance of obtaining a just appreciation of these morbid changes cannot be over-estimated. Upon their recognition depends the ability to establish correct diagnoses.

PRIMARY LESIONS.

MACULES.

Syn., Maculæ; Spots; *Germ.*, Flecke; *Fr.*, Taches.

MACULES ARE VARIOUSLY SIZED, SHAPED, AND COLORED PORTIONS OF ALTERED SKIN, UNACCOMPANIED BY ELEVATION OR DEPRESSION.

They are of various sizes; they may be as small as a pin-head or as large as a hand. In outline they are usually roundish, but they may also be irregular in shape. They are usually circumscribed. In color and tint they vary exceedingly; they may, in fact, be of any color, the more common, however, being reddish, yellowish, and brownish. They are the product of diverse causes, and consequently represent a number of pathological conditions.

The simplest variety of macule is that caused by hyperæmia and called *erythema*, examples of which are of constant occurrence in connection with numerous disorders.

Maculæ may also be the result of hemorrhage into the tissues of the skin, when they appear as reddish, bluish, or blackish marks, which do not disappear under pressure. Such are met with in purpura. Flat vascular or pigmentary growths in the skin, as some *naevi*, are also included as macules.

Alterations in the pigmentary function of the skin likewise give rise to macules, which may be due to either an increase or a deficiency of the normal coloring matter. The disease vitiligo offers an instance where the spots are caused by an increase as well as a deficiency of the pigment, both atrophy and hypertrophy taking place side by side. The yellowish macules termed *chloasmata*, observed for the most part about the face of women, occasioned by the presence of an excessive amount of the normal pigment, may also be mentioned. Another form of the macule, due to the same cause, is found in lentigo, or freckle; still another, yellowish in color (due to a vegetable parasite, the *microsporon furfur*), in tinea versicolor.

When abnormal coloring of the skin involves the whole or a large portion of the surface in a uniform manner, the condition is designated a *discoloration*. Examples of this are observed in jaundice, in Addison's disease, and in leprosy; also in the staining of the skin resulting from the internal use of nitrate of silver.

The pigment deposits or stains accompanying or following certain diseases, as, for example, lichen ruber and syphilis, may also be referred to; likewise chemical stains, as those resulting from the external use of iodine, nitrate of silver, and other substances.

Macules are evanescent or permanent according to their cause. They disappear or remain under pressure, as they are of one kind or another. They may or may not be accompanied by subjective symptoms.

PAPULES.

Syn., Papulæ; *Germ.*, Knötchen; *Fr.*, Papules.

PAPULES ARE CIRCUMSCRIBED SOLID ELEVATIONS OF THE SKIN, VARYING IN SIZE FROM A PIN-HEAD TO A SPLIT PEA.

They are of various shapes; some are acuminate, some are rounded, while others are flat and angular. They are encountered in numerous diseases; are due to a great number of causes; and have their seat in different structures of the skin. They may be situated in the corium; in connection with sebaceous glands; or about the hair-follicles. They may or may not be inflammatory, according to their origin and mode of development. Their color varies; they may be reddish, pale or dark in shade, yellowish, or whitish.

Papules are of many varieties, the more prominent of which are the following. The commonest is that which consists of a small circumscribed plastic exudation in the skin. It finds its typical expression in papular eczema. Inflammatory papules may or may not undergo metamorphosis into other lesions; thus, not infrequently they pass on into vesicles and pustules, or they may break down and become ulcers, as occurs in syphilis. Another variety is made up of accumulations of epidermic cells, arranged concentrically around the entrances of the hair-follicles, forming conical elevations, as in keratosis pilaris.

Still another kind is formed about the sebaceous glands, consisting of a circumscribed collection of sebum, producing a small, whitish, semi-globular elevation, as observed in milium. Closely allied to this formation is that which occurs in comedo, which may also be considered as a papule. Finally, hemorrhage into the skin may give rise to papules, as in purpura papulosa.

They may also be formed by hypertrophy of the normal struc-

tures of the skin, as the papillæ, examples of which may be observed in ichthyosis, warts, etc.

The duration of papules varies with their character, as in the case of the other lesions of the skin. They may be acute, chronic, or permanent. They may disappear by absorption, as in the case of most of the inflammatory varieties, or they may be removed by mechanical or other means, as may take place in epithelial molluscum or in milium. Inflammatory papules are in the course of their evolution frequently surmounted by accumulations of fine scales, more particularly during the stage of decline. When scales are present, the lesion receives the name of a *squamous papule*; this condition is of common occurrence in syphilis. The disappearance of inflammatory papules, especially those of long standing, is apt to be followed by more or less pigmentary deposit, as in lichen ruber.

Papules may or may not be attended by itching, this symptom, as well as others of a like kind, depending upon their nature, and also upon the individual. Those of eczema are remarkable for the violence of the itching which they occasion, while, on the other hand, those of milium or of keratosis pilaris give rise to no inconvenience.

VESICLES.

Syn., Vesiculæ; *Germ.*, Bläschen; *Fr.*, Vésicules.

VESICLES ARE CIRCUMSCRIBED, ROUNDED OR ACUMINATED ELEVATIONS OF THE EPIDERMIS, VARYING IN SIZE FROM A PIN-POINT TO A SPLIT PEA, CONTAINING A CLEAR OR OPAQUE FLUID.

They are of different colors, according as their contents are pure serum, sero-purulent matter, or serum mixed with blood. When recent and typical in character, they are clear and possess a yellowish hue. They may be either fully or partly distended with fluid; their walls may be tense or flaccid. As a rule, they rupture readily, and discharge their contents over the surrounding surface. Certain vesicles, however, as those of herpes zoster and sudamina, are tenacious, and do not break unless exposed to violence.

In form vesicles are rounded, circumscribed, and either possess a dome-like roof or are more or less acuminated. They may have an even, rounded, or irregular surface, or they may have slight depressions on their summits or about their walls. Anatomically

they have their seat sometimes between the mucous and horny layers of the epidermis, in other cases within the mucous layer. They may be superficial or deep-seated. They may be single or compound, consisting of one or of several chambers; single vesicles are seen, for example, in sudamina; compound vesicles in herpes zoster, and in dermatitis from rhus poisoning. They may also coalesce. As a rule, they are inflammatory. They may also be due to collections of sweat about the apertures of the gland ducts. Vesicles do not remain as such for any length of time; rarely for more than a few days. They either rupture, the fluid becoming a crust, or they retain their contents, which are absorbed or pass into a purulent condition and thus become pustules. The changes which they undergo vary in different diseases, and even in the same disease.

Vesicles rarely occur singly, but almost always in numbers, either in the form of aggregations, as in eczema, or in distinct groups, as in herpes zoster. They may occur upon all parts of the body, more especially upon those regions where the epidermis is delicate and soft; but they are also encountered in the palms of the hand. They are usually accompanied by burning and itching sensations; at times, however, such symptoms are absent.

BLEBS.

Syn., Bullæ; *Germ.*, Blasen; *Fr.*, Bulles.

BLEBS ARE IRREGULARLY-SHAPED ELEVATIONS OF THE EPIDERMIS, VARYING IN SIZE FROM A SPLIT PEA TO A GOOSE-EGG, CONTAINING A CLEAR OR OPAQUE FLUID.

They vary exceedingly in size, and have no definite form. Large and small blebs may occur simultaneously side by side. They may appear either singly or in numbers; they are rarely so numerous as vesicles, nor do they incline to form into groups.

When recent they are usually of a pale yellowish color; when their contents become turbid, they are whitish or yellowish; containing blood they are reddish or brownish, and are often streaked. Their fluid is albuminous and offers an alkaline or neutral chemical reaction.

Blebs usually possess strong walls, and do not tend to rupture spontaneously. As a rule, they consist of a single chamber. They are generally distended, often to their utmost capacity; in par-

ticular instances, however, they are only partly filled and remain flaccid. At times they break before they are perfectly formed, leaving their shattered walls attached to the skin in the form of shreds; this process, for example, takes place in pemphigus foliaceus.

The walls of blebs usually rise up directly from the surface of apparently healthy skin, without, as a rule, marked signs of inflammation; occasionally areolæ are present. Like vesicles, they have their seat in the middle or deeper layers of the epidermis. Their intimate structure also corresponds to that of vesicles. They are not commonly attended by marked itching or burning sensations, except sometimes in their early stages, or in those cases where they are present in large numbers. In severe pemphigus, however, these symptoms are at times very positive. They are encountered in pemphigus, pemphigoid eruptions, dermatitis, erysipelas, herpes iris, syphilis, leprosy, and occasionally as a complication in other diseases.

PUSTULES.

Syn., Pustulæ; *Germ.*, Pusteln; *Fr.*, Pustules.

PUSTULES ARE CIRCUMSCRIBED, ROUNDED, FLAT, OR ACUMINATED ELEVATIONS OF THE EPIDERMIS CONTAINING PUS, VARYING IN SIZE FROM A PIN-POINT TO A LARGE FINGER-NAIL.

They either originate as pustules or become so by transition from vesicles or papules. Thus; all stages from the vesicle to the pustule are encountered, such lesions being designated vesico-pustules. Inasmuch as they always contain pus, pure or mixed, they have a yellowish-white or yellowish opaque color; not infrequently they also contain blood, in which event they are dark reddish or brownish.

There are several well-defined kinds of pustule, their chief differences resting in their seat, mode of development, and structure. The pustule of acne, for example, has its seat in a sebaceous gland; that of syeosis, about a hair-follicle; that of ecthyma and of pustular eczema, in the papillary layer of the corium. As a rule, they are accompanied with areolæ, which are frequently extensive and characterized by a high degree of inflammation and at times induration.

Their course and duration vary according to their character; they usually incline to a rapid termination. They either burst,

forming a thick, yellowish, greenish, or brownish crust, or desiccate without rupture, leaving a dry, friable, often bulky crust. Pustules may or may not be followed by cicatrices, this depending upon the nature of the lesion, and also upon the extent to which the process has involved the corium. The scars resulting from variola, as well as from acne and from syphilis, are well known.

Pustules are for the most part unaccompanied by prominent subjective symptoms. In some cases burning sensations and pain are present, as in sycosis non-parasitica and ecthyma; more rarely itching is noted.

WHEELS.

Syn., Pomphi; *Urticæ*; *Germ.*, Quaddeln.

WHEELS ARE ROUNDED, FLAT, ELONGATED, OVALISH, OR IRREGULARLY-SHAPED, RAISED ELEVATIONS OF AN EVANESCENT CHARACTER.

Their size varies extremely; they may be as small as split peas, the size of a finger-nail, or as large as the palm of the hand. They may occur singly, but are apt to appear in numbers, and when near to one another exhibit a decided inclination to run together; by this process of coalition large surfaces often become involved in patches. In form, they ordinarily manifest themselves as bean-shaped or ovalish elevations, tending to assume an elongated rather than a rounded shape; they also occur in the form of irregular lines, bands, or stripes. Their color is usually whitish, rosy, or pinkish, often with pale centres, and with more or less marked areolæ. Sometimes they present a shining aspect. In duration they are evanescent, or fugitive; they form rapidly, often in a few moments, and, remaining a longer or shorter time, usually disappear in almost as rapid a manner as they came. Their course is capricious.

They have their seat in the upper layers of the skin, and are produced by a sudden effusion of fluid into the meshes of the corium, followed by immediate contraction of the capillaries, the skin being for the time in a state of spasm. Upon relaxation the fluid is absorbed and the wheal disappears. They may contain serous fluid, as in simple urticaria, or a mixture of serum and blood, as in purpura. The typical wheal is seen in the sting of the common nettle; also in urticaria. They are always accompanied by tingling, burning, and itching sensations, which are often very distressing.

TUBERCLES.

Syn., Tubercula; *Germ.*, Knoten; *Fr.*, Tubercules.

TUBERCLES ARE CIRCUMSCRIBED, FIRM, ROUNDED OR ACUMINATED ELEVATIONS OF THE SKIN, VARYING IN SIZE FROM A SPLIT PEA TO A CHERRY.

In shape they are usually circumscribed, but possess no definite form; they may be semi-globular, conical, flat, or of irregular outline. Their color is usually reddish: this feature, however, depends upon their nature; thus, in molluscum fibrosum they are pinkish or flesh-colored. In those cases where they are due to inflammatory products or to new formations, they are apt to exhibit a brownish-red color. They are ordinarily of firm consistence, and have their seat in the corium and subcutaneous connective tissue. In minute structure they are similar to papules, frequently being in reality exaggerated papules involving deeper tissues and a more extended amount of surface. They are the result of various causes, as in the case of papules, but are produced in great part by the cellular neoplasmata. Syphilis, leprosy, and carcinoma all give rise to marked examples of tubercle. They undergo various changes in their involution, according to their nature and circumstances; they are either absorbed or break down and ulcerate and are followed by scars, or they may establish themselves and remain permanent, as in molluscum fibrosum.

TUMORS.

Syn., Tumores; *Phymata*; *Germ.*, Knollen; *Fr.*, Tumeurs.

TUMORS ARE VARIOUSLY SIZED, SHAPED, AND CONSTITUTED, FIRM OR SOFT PROMINENCES.

They are of all sizes, from a pea to an egg and larger. They are usually of a semi-globular form, and are either connected to the skin with a broad base, as in epithelial molluscum, or are pedunculated, as in many cases of molluscum fibrosum. They are more or less well defined, according to their nature. Their color is often the same as that of the adjacent skin or reddish. They rise above the surrounding skin to a variable elevation, and, on the other hand, extend more or less deeply into the tissues beneath. They are occasioned by a great variety of causes: alterations in the sebaceous glands, new formations in the corium, connective

tissue, bloodvessels, and lymphatics, all give rise to their development. They may or may not be painful.

SECONDARY LESIONS.

CRUSTS.

Syn., Crustæ; *Germ.*, Borken; *Krusten*; *Fr.*, Croûtes.

CRUSTS ARE EFFETE MASSES OF DRIED MATERIAL COMPOSED OF THE PRODUCTS OF DISEASE OF THE SKIN.

They are variable as to size and form, their features depending upon the nature of the process which has occasioned them, as well as upon the length of time which they have existed; they may be large, thick and bulky, or thin and flat. They are adherent to the skin or loose, according to their age and the nature of the disease. In color they are usually yellowish or brownish; they may also be greenish, reddish, or blackish. They are for the most part formed by the desiccation of exuded fluids, as serum, pus, and blood. Several distinct varieties of crusts are observed. Those resulting from an open, serous-discharging surface are yellowish in color, friable in consistence, and usually without definite outline or bulk, as in eczema; those following the breaking down of pustules are darker, more tenacious, and thicker, as in ecthyma. The crusts of syphilis are firmer and less friable in structure, and frequently have a heaped-up appearance; they are often greenish in color, and, when recent, are seated upon an ulcer. Reddish or blackish crusts always contain more or less blood. Sebaceous crusts, as those of seborrhœa, are light yellow, dirty yellow, or blackish in color; they are flat, lamellated, adherent to their bed, and have both a greasy appearance and feel. Another form of crust, that of tinea favosa, remains to be mentioned; here the formation is chiefly composed of the parasite, and presents a sulphur-colored, cup-shaped, or, if old, an irregularly-shaped mass.

SCALES.

Syn., Squamæ; *Germ.*, Schuppen; *Fr.*, Squames.

SCALES ARE DRY, LAMINATED MASSES OF EPIDERMIS WHICH HAVE SEPARATED FROM THE TISSUES BENEATH.

They vary greatly in size and form; they may be large and thick or small and thin; they may be abundant or scanty. In

consistence they are always dry and of a horny nature; they possess a harsh feel, and are more or less brittle, with a tendency to separate and to break up into their more minute elements. Their color is usually whitish or grayish; at times they are yellowish or dirty-yellowish. They usually have a shining or glistening aspect. The quantity formed and thrown off varies with the morbid process. With many inflammatory diseases scaling occurs as a prominent symptom, the amount and character of the inflammation influencing the degree of desquamation.

Scales are at times formed in large, bulky lamellæ or plates, or in heaps, as in psoriasis; sometimes in thin flakes, as in pityriasis rubra: in other cases, as in dry seborrhœa or in eczema, they consist of coarse or fine flakes or bran-like particles. They are due to a variety of causes. The diseases producing them may have their seat in the corium or epidermis, as in the vegetable parasitic diseases, or they may be located in the deeper structures, as in the inflammatory affections. They are also met with in hypertrophies, as in ichthyosis. They are likely to form in all cases in which there is want of proper nutrition in the skin, and therefore may be the product of numerous pathological changes.

EXCORIATIONS.

Syn., Excoriationes; *Germ.*, Hautabschürfungen; *Fr.*, Excoriations.

EXCORIATIONS ARE VARIOUSLY SIZED AND SHAPED LOSSES OF TISSUE OCCURRING IN THE SUPERFICIAL LAYERS OF THE SKIN.

Their seat is usually in the epidermis, extending to the mucous layer, but not infrequently the papillary layer of the corium is involved. They comprise slight wounds and abrasions of the skin, lacerations, scratch marks, etc. As a rule, they heal readily and without leaving scars. In appearance they present a variety of forms, as they happen to have been produced by one or another cause. Ordinarily they consist of torn points, lines, or streaks, more or less furrowed, with shreds of epidermis variously sized and shaped, for the most part irregular, showing reddish, moist surfaces, oozing minute quantities of serum and blood which have a tendency to dry into crusts. They may be present in connection with an eruption of a pruriginous nature, or they may exist independent of disease, as simple wounds of the epidermis produced by mechanical causes.

Scratching, on the part of the patient, is the direct cause of the vast majority of excoriations. The symptoms which give rise to the desire for scratching are numerous, and are intimately connected with a large number of diseases. All disorders of the skin accompanied by nerve irritation, whether from an internal or an external cause, occasion more or less itching and consequent scratching. If the itching be intense, the scratching usually will be violent and the marks proportionally severe and deep; if slight, as a rule, there will be but little and the lesions superficial. Excoriations occur most abundantly in eczema, in scabies, and in pediculosis. All skins are not affected to the same extent by the act of scratching; in some the lesions are readily produced, while in others the tissues resist the injury.

If violent scratching and rubbing be continued for a long period, the skin becomes more or less inflamed, varying in degree in different individuals, generally resulting in considerable infiltration, thickening, and pigmentation. This state of the integument may be frequently observed in those who have suffered for a long time with pediculosis. Excoriations play an important rôle in many diseases of the skin, and should always receive attentive consideration. Their number, form, distribution, and localization are in themselves sufficient in certain diseases to establish the diagnosis.

FISSURES.

Syn., Rhagades; *Germ.*, Hautschrunden; *Fr.*, Fissures.

FISSURES ARE VARIOUSLY SIZED AND SHAPED LINEAR CRACKS OR WOUNDS, DUE TO DISEASE OR TO EXTERNAL AGENCIES, HAVING THEIR SEAT IN THE EPIDERMIS OR CORIUM.

They commonly occur about the well-marked normal furrows of the skin, as about the palms, soles, fingers, and toes; they are also encountered in other regions. They assume various sizes, and appear as long, narrow or broad, superficial or deep, reddish, dry or moist, linear openings or clefts. They are either the result of a diseased condition of the tissues, as in eczema, psoriasis, or syphilis, or they may be caused by local irritants, as cold or chemical agents, acting injuriously upon the epidermis. Any portion of the surface which is liable to extreme tension may become the seat of fissures. They are generally painful, and interfere with the natural movements of the part.

ULCERS.

Syn., Ulcera; *Germ.*, Geschwüre; *Fr.*, Ulcères.

ULCERS OF THE SKIN ARE IRREGULARLY SIZED AND SHAPED EXCAVATIONS OF THE CUTANEOUS TISSUES, THE RESULT OF DISEASE.

They vary extremely as to size and shape; they may be no larger than a pin-head or as large as a hand, and even larger; in outline they are usually roundish, but they may also be irregularly shaped, kidney-shaped, or serpiginous. Sometimes they exhibit an excavated or crater-like appearance; in other cases they have a scooped-out form. They may be superficial, shallow, or deep; not infrequently they extend into the subcutaneous structures. They present a more or less moist, bleeding, or discharging surface, which may or may not be crusted. Their bases are smooth, uneven, or irregular; reddish in color; and are covered with a grayish, yellowish, or reddish, offensive or inoffensive secretion, which may be either abundant or scanty, according to the nature of the morbid process. Their edges are usually defined; not infrequently they are abrupt; at times they are markedly everted or undermined. Ulcers are the result of previous disease, and occur in the course of a number of diseases, chief among which are syphilis, lupus, lepra, carcinoma, carbuncle, and furuncle. They may occur upon any part of the surface, but are most frequently met with upon the lower extremities. Their duration is variable; they are seldom stationary, but show, on the contrary, a decided disposition to undergo change. Many tend to enlarge; others manifest an inclination to heal. When repair takes place it is in the form of a cicatricial tissue, which remains permanently. Ulcers are usually painful.

SCARS.

Syn., Cicatrices; *Germ.*, Narben; *Fr.*, Cicatrices.

SCARS ARE NEW FORMATIONS OCCUPYING THE PLACE OF FORMER NORMAL TISSUE.

They have a glistening, contracted appearance, and are surrounded by a normal skin, into which they imperceptibly blend. They are usually smooth and soft to the feel, and have a shining appearance; they may, however, be indurated or firm. They possess different forms or characters, according to the disease

which has occasioned them ; they may be on a level with the skin, or, as is more often the case, somewhat depressed ; they may also be raised. At times they are linear, band- or cord-like, and in other instances contracted, knotted, or puckered. Their color is usually whitish ; but this varies, for if recent they may be pinkish or reddish, while if old they may be grayish, yellowish, or brownish. They consist of connective-tissue elements, and do not contain any of the normal structures of the skin, as hairs, glands, and papillæ.

Sears may be the result of disease or of injury. They are known to follow all of the ulcerative diseases, and also all injuries involving loss of substance, as burns, scalds, and wounds, also the application of caustics. Although they result from a variety of causes, many of them are found to be very similar in character ; hence they cannot be said to be positively indicative of the process which has occasioned them. At the same time they not infrequently possess certain features—as, for example, outline, number, size, texture, and location—which point unmistakably to the original disease. They are generally permanent, continuing to exist through life with but little alteration ; occasionally they undergo more or less change. They are for the most part indolent ; in rare cases, however, they may be painful.

GENERAL SYMPTOMS.

All of the existing lesions present in a given case of disease, viewed as a whole, constitute what is known as an *eruption*. An aggregation of lesions, whether of the same or of different character, go to make up what is termed a *patch* of disease.

The individual lesions of a disease may all be of the same kind, as, for example, papules, in which event they are *uniform* ; or they may be different, of two or more kinds, macules, papules, and vesicles, for example, all being present, when they are said to be *multiform*. They may, moreover, be isolated, or *discrete*, or they may be so numerous as to be closely crowded, or *confluent*.

The following expressions, descriptive of peculiar forms of lesion, are used in connection with certain diseases, more especially in those cases in which the lesions are both uniform and numerous : when small, millet-seed sized, *miliaris* ; when pointed, *acuminatus* ; when of the size and shape of a pea or bean, *lenticularis*, etc. Thus, common examples are found in the expressions *miliary*

papular syphiloderm, acuminated warts, and lenticular papular syphiloderm.

The terms *neonatorum*, *infantis*, *adultorum*, *senilis*, etc., are frequently convenient to express concisely the time of life at which the disease occurs: for example, the sclerema of the new-born is called *sclerema neonatorum*; the eczema of infants, *eczema infantile*, etc.

Distribution.—Great variation exists in the distribution of the lesions; they may occupy the whole or the greater part of the surface, or they may be localized to a small circumscribed area. They generally take the course of the natural lines of the skin, on the sides of the thorax, for example, running parallel with the ribs. Not infrequently they follow the course of nerve trunks, as in *nævi*, herpes zoster, ichthyosis hystrix, warts, and leprosy. They may further appear aggregated in patches,—*aggregatus*; or they may be disseminated,—*disseminatus*. When an eruption involves the whole surface, it is said to be *universal*; when various parts are affected, without regularity of distribution, it is called *diffused*.

Configuration.—The lesions of the skin form themselves into a great variety of figures or patterns. Some of these are peculiar, and are characteristic and constant symptoms of certain diseases, while others are common to many diseases. In other affections they manifest themselves without attempt at configuration. The various outlines or forms assumed by individual lesions or by patches of disease are designated by the following suggestive terms. When the lesions occur discretely in the form of small, pin-head sized points, the condition is termed *punctatus*; when they are of the size of drops, *guttatus*; if as large as pieces of coin, *nummularis*. As an example, certain of the forms of psoriasis are known as *punctata*, *guttata*, and *nummularis*.

When a patch, of whatsoever disease, presents a circular form, it is called *circinatus*; when in the form of a ring, *annulatus*, or *annularis*, as in *tinea circinata*. When the lesions appear in concentric rings, the condition is expressed by the word *iris*, as, for example, herpes iris. Occasionally patches are encountered whose margins upon one side appear unusually sharp and well defined against the sound skin; to these the name *marginatus* is given. The condition is often seen markedly developed in ringworm of the body.

When the patches are circumscribed and are marked by an abrupt line of demarcation, as in psoriasis, for example, the word *circumscriptus* is used. If the patches arrange themselves in such a manner as to form winding or gyrate markings, the term *gyratus* is employed. This is sometimes observed in psoriasis. The designation *serpiginosus* is applied to those forms of disease, especially tubercles and ulcers, which pursue their course in a creeping, serpentine manner; as an instance, we speak of the serpiginous tubercular syphiloderm.

The state of an eruption, as to its striking feature, is often denoted as follows: *hypertrophicus*, used in connection with hypertrophies and new growths, is employed to indicate an exuberant or hypertrophic condition, as in lupus; *exulcerans*, when the process of ulceration is extensive, as often occurs in syphilis; *humidus* or *madidans*, when moisture is present, as in eczema; and *siccus*, when there is absence of moisture, as in seborrhoea.

Locality.—The regions of the body invaded vary with the disease. Certain affections are peculiar in that they attack only particular localities; some possess a decided preference for this or that region, while others exhibit no elective point of manifestation. Thus, lupus vulgaris and lupus erythematosus both tend to attack the face; tinea favosa, the scalp; acne, the face; erythema multiforme papulosum, the backs of the hands; and erythema nodosum, the legs. In some affections, as psoriasis, the extensor surfaces of the extremities are almost exclusively involved; while in others, as the erythematous syphiloderm, the flexor surfaces are the chief seat of disease. The form of the distribution of certain diseases is explained by peculiarities in the structure of the skin as found in various regions.* The terms *capitis*, *facialis*, *brachialis*, *femoralis*, *abdominalis*, *palmaris*, *plantaris*, etc., are conveniently used to denote the exact region involved; as, for example, eczema capitis, herpes zoster facialis, etc.

Symmetry.—Diseases of the skin may or may not be symmetrical. The inflammatory diseases in particular, as eczema and

* The localization of the various diseases of the skin has received attentive study from Oscar Simon, of Berlin, who established a scheme of architecture for the skin based upon the anatomical structure of this organ. See his work entitled "Die Localisation der Hautkrankheiten, histologisch und klinisch bearbeitet." Mit 5 Tafeln. Berlin, 1873.

psoriasis, show a marked tendency to appear symmetrically upon either side of the body. The palms and soles, hands and arms, are often similarly affected at the same time. In some instances, as in erythema multiforme, symmetry is almost invariably present. It is generally seen to best advantage upon the extremities.*

Color.—This necessarily varies with the nature of the pathological process. It also varies greatly according to the stage of the disorder, a point which must always be taken into consideration. In many diseases it is tolerably uniform and constant, as in psoriasis and in tinea versicolor. Different colors and shades are often seen in the several stages of a disease, as, for instance, in erythema nodosum. The tint is, moreover, often influenced by external agencies, as by heat or cold, and also by local treatment.

When an affection is characterized by a prominent and uniform color, whether evanescent or permanent, it is at times designated by a term descriptive of this peculiarity; in this manner the adjectival words *albidus*, *ruber*, *flavescens*, *melanodes*, etc., are affixed to diseases, as, for example, *eczema rubrum*.

SUBJECTIVE SYMPTOMS.

Diseases of the skin may or may not be accompanied by subjective symptoms. Among the inflammations, new growths, and neuroses they are of common occurrence; while among the hypertrophies and atrophies they are either absent or are only occasionally encountered. They may be trivial, or, as is often the case, distressing in their severity and persistency. Disordered sensation occurs either in the form of a diminution of the normal sensibility, constituting *anæsthesia*, or as an augmentation of the same, termed *hyperæsthesia*. The latter may be simple or perverted in character. More or less heat is present in all of the hyperæmie and inflammatory affections, notably in those running an acute course. Sensations described as burning, tingling, and smarting also not infrequently attend the same class of diseases. Itching, however, is by far the most prominent of the subjective symptoms, and is

* For information on this question the reader is referred to Testut's valuable work "De la Symétrie dans les Affections de la Peau." Paris, 1877. For abstracts see *Annales de Derm. et de Syph.*, t. viii. p. 385; also *Archives of Dermatology*, July, 1878.

present in varying degree in a large number of disorders. It may be due to external causes, as, for example, parasites, or to internal causes, acting directly or reflexly, as in eczema and pruritus. It is variously described by patients. The sensation of formication—as though insects were crawling over the surface—may be mentioned as one of the most striking varieties. Pain, of a burning or shooting, neuralgic character, is also sometimes experienced, as in herpes zoster, dermatalgia, and neuroma.

ETIOLOGY.

The causes at work in the production of the various diseases which affect the skin are manifold. In order thoroughly to comprehend them it is of the utmost importance that an expansive view of the subject be taken, for in many instances it will be found that the manifestations upon the surface are but indexes or direct symptoms of disorder in other portions of the system.

A large proportion of the cutaneous diseases are intimately associated with derangement of the internal economy, and are therefore, strictly speaking, *symptomatic* diseases. As striking examples of such complaints the polymorphous erythemata, the exanthemata, as well as certain pigmentary and hemorrhagic affections, may be cited.

On the other hand, a great number of diseases have their origin in the skin itself, and are confined in their action to this organ alone; these are the so-called *idiopathic* disorders. To this class belong all of the local diseases, as, for example, certain of the hypertrophies and atrophies, as well as those numerous conditions produced by external agencies, including parasites. It must never be lost sight of, however, that the relationship between the system at large and the skin is extremely close, so much so that very frequently it becomes a most difficult matter to determine to what extent a disease is local or constitutional. The line of demarcation cannot be a strict one.

The subject of etiology may be considered under the three following heads: conditions influencing disease; internal causes, or those which act from within the system; and external causes, or those which act from without.

CONDITIONS INFLUENCING DISEASE.

Age.—It is well known that a number of diseases are liable to make their appearance at certain periods of life, while others may

appear at any time. A limited number are noted to occur only at stated ages, thus manifesting a striking peculiarity. Thus, ichthyosis first shows itself during early childhood, commonly at about the second year, occasionally earlier or at birth. The congenital syphilodermata appear, as a rule, between the first and third months of life; at times they are present at birth. *Tinea tonsurans* is a disease of childhood. *Impetigo contagiosa* is likewise almost exclusively confined in its origin to the early years of life. *Tinea versicolor*, on the other hand, is never seen in children. The vegetable parasitic diseases in general rarely occur in the old, but are met with from infancy to middle age; while pediculosis of the body is only exceptionally observed in the child. Carcinoma very rarely occurs in the young; it seldom manifests itself before middle age, and frequently not until old age. Pruritus in the majority of cases is an affection of adult life.

Sex.—It will be found that some diseases are to a great extent peculiar to one or the other sex, while others are noted to be more common in one than in the other. For example, syeosis is met with only in the male; epithelioma is of more frequent occurrence in the male; while lupus, especially lupus erythematosus, is more common in the female.

Seasons.—The seasons exert a marked influence upon many of the inflammatory affections, as well as upon those of other classes, as, for example, hypertrophies; the majority of diseases are aggravated by cold weather, as is commonly observed in eczema, psoriasis, and ichthyosis. Pruritus hiemalis is encountered only during cold weather. Other disorders, again, occur only during the hot months, as, for instance, prickly heat; while still others incline to appear more commonly during the spring and autumn, as erythema multiforme.

Climate.—The influence of climate in the production of cutaneous disease cannot be questioned. Observations have established the fact that certain diseases are almost peculiar to certain countries; as examples, leprosy, elephantiasis Arabum, framboesia, and pellagra may be mentioned. To what extent, however, climate alone is to be held accountable cannot be definitely ascertained; other agencies, as hygiene, diet, and the habits of the people, must also receive consideration as probably having a share in the causation of the malady.

INTERNAL CAUSES.

Here are to be classed all those causes originating internally, or of a constitutional nature, which are known to be able in any way, however remote, to give rise to disease of the skin. They are numerous and call for profound investigation. At times they are very obscure and far removed in their seat from the skin; while, on the other hand, in some cases they are so commonplace as to be overlooked by the casual observer.

Hereditability.—Some diseases are known to be hereditary; as common examples, syphilis, leprosy, ichthyosis, psoriasis, and eczema may be cited. It must not, however, be supposed that these diseases are in every instance hereditary; for, according to my experience, the two latter affections are more frequently found to be developed in the individual *de novo* than to be transmitted from parents. Ichthyosis, likewise, often originates with the individual so affected.

Predisposition.—By this term I mean a peculiar, inherent state of the constitution which inclines to the ready development of one or another disease. Its existence is not uncommon. The tendency may exhibit itself in one, or, as is often the case, in all of the members of a family. It may be inherited, or it may originate with the individual. Thus, it is a matter of every-day observation that certain families manifest more or less of a disposition to the development, under favorable conditions, of some of the commoner forms of disease, especially those of an inflammatory character, as, for example, eczema.

Constitutional Diseases.—These in many instances exert a potent influence upon the skin. At times the malady is of such a nature that its existence merely predisposes to disorder of the skin, as is the case, for example, in chlorosis; while in other instances, as in the exanthemata and in syphilis, it is of so violent a nature that the eruption is but one of a number of prominent and constant symptoms. In this connection it may be observed that general ill health, resulting from a variety of causes, plays a conspicuous part in both the causation and the continuance of cutaneous affections; a recognition of this fact will frequently be of assistance as a guide in the treatment. It is owing to a deterioration of the normal state of health of the individual, for example, that furn-

culi, ecthyma, eachectic acne, and ill-conditioned excoriations often show themselves. Instances of this kind are frequently encountered in large hospitals and in almshouses.

Disorders of Internal Organs.—Here may be mentioned a number of functional and organic diseases capable, under peculiar conditions, of causing marked cutaneous manifestations. Thus, derangement of the alimentary canal is a prolific source of a large number of complaints, among which eczema, urticaria, and acne stand forth as prominent examples. Affections of the kidney, as Bright's disease, albuminuria, and diabetes, occasionally give rise to cedema, pruritus, and more rarely to eczema. Diseases of the liver are known to occasion discolorations, as in jaundice, also pruritus. Uterine diseases are likewise recognized as frequently causing pigmentary disturbances, urticaria, eczema, and other diseases. Finally, derangement of the nervous system is, as is now well recognized, capable of giving rise to a variety of disorders; thus, eczema, herpes, urticaria, pruritus, and alopecia, also certain hypertrophies and atrophies, may be referred to as being not infrequently caused and influenced by both functional and organic disease of the nervous system.

Food.—Diet is doubtless accountable for a number of diseases. Improper quantity of food, whether too much or too little, and unsuitable quality, are both to be regarded as conspicuous factors in the causation of diseases of the most diverse nature. To keep the economy in a perfect state of equilibrium it is essential that the proper amount and kind of nutriment be taken into the system. Many skin diseases are without doubt due to improper diet, viewing the subject in its broadest sense; and in proof of this, one has but to glance at the clinics of our hospitals and dispensaries, and to note the poor general health and inquire into the usual diet of the subjects of these disorders. Certain kinds of food are particularly liable to occasion cutaneous disturbance; fish, especially shell-fish, for example, is in many individuals sufficient to call forth urticaria. Some fruits, as strawberries, are in like manner at times followed by the same disease. Oatmeal and buckwheat are also known to occasion pruritus in some individuals. The injurious effects of wine and beer, and of indigestible articles of food, as cheese, pickles, spices, pastry, and the like, are frequently seen in eczema, urticaria, acne, and other diseases.

The cause here is an exciting one, and, while indirect as regards the skin, is not on this account any the less positive in its results. Great latitude is to be granted in the consideration of this subject, for what proves poison to one is food for another.

Medicine.—The ingestion of certain drugs used as medicines is at times productive of mischief upon the skin; striking instances are observed in the urticarial eruption occasionally following the administration of copaiba and of cubebs. Quinine, chloral, belladonna, and morphia are also capable of giving rise to one or another form of efflorescence. The bromide and iodide of potassium are also known to produce peculiar and often severe forms of eruption.

Pregnancy.—This state is not infrequently noted to exert a decided influence upon the skin. Now and then it is observed to occasion attacks of eczema, herpes, and pruritus, which disappear immediately upon the removal of the cause. Chloasma is likewise frequently observed as an accompaniment of pregnancy. On the other hand, chronic affections, as eczema and psoriasis, are often observed to be much better during this period. The period of lactation is also noted to influence the course of some diseases, as eczema, psoriasis, and disorders of the sebaceous glands. Some women with chronic diseases of this kind are invariably better than usual, or even free, during this time, while others are invariably worse.

Dentition.—This process must be regarded merely as an exciting cause of cutaneous disorder; its importance, viewed in the light of a cause of disease, is secondary, and should not be over-estimated. Both eczema and urticaria are sometimes aggravated by this cause.

Vaccination.—In addition to the usual local disturbance which this process occasions, it is now and then followed by peculiar erythematous, pustular, or furuncular affections; they occur, however, comparatively rarely, and are usually benign in their nature. Occasionally, however, the disease is deep-seated, and is severe, giving rise to considerable inflammation of the skin and subcutaneous tissues, variable as to form.

EXTERNAL CAUSES.

The causes of this nature are numerous. Many of them are to be viewed simply as exciting causes, giving rise to disorder only under peculiar conditions, or in those cases where there already exists a predisposition to the disease manifesting itself. Others, however, act injuriously upon the skin, and are the direct and only source of disease.

Occupation.—Certain occupations are known to be productive of harm to the skin, giving rise to hyperæmia, inflammation, or hypertrophy. Thus, workers in chemicals, as acids and alkalies, and in dye-stuffs, especially aniline products, and arsenic, are liable to suffer from the irritating substances with which they come in contact. Washerwomen exposed to the long-continued influence of water and strong soap, and masons, may also be referred to; individuals following these occupations not infrequently have rough or harsh skins and fissures. Machinists, carpenters, shoemakers, and others who make constant use of tools, are ordinarily the subjects of more or less epithelial hypertrophy upon the hands, in the form of callosities.

The extremes of heat and cold also act as causes in the production of disease; as examples of the former, erythema and dermatitis resulting from continued exposure to a high temperature may be mentioned. As an instance, miliaria may be cited. The action of the sun in calling forth several varieties of disease, as simple dermatitis, and pigmentation, is well known. Cold acts in a similar manner, as observed in frost-bite.

Clothing.—Certain kinds of clothing, as well as unsuited modes of dress, must also be regarded as giving rise to irritation and hyperæmia of the skin. The rough flannel worn so persistently by the working classes not infrequently serves as an exciting cause of erythema or of follicular inflammation. Constant friction produced by ill-fitting articles of wear over tender portions of the body, as a stocking or shoe over the instep or about the heel, will often suffice to give rise to excoriations, ulcers, and other forms of disease.

Irritants.—Cutaneous irritants are the source of much mischief; for example, strong external remedies too freely used may prove causes of hyperæmia and inflammation. Among these, as most

frequently occasioning disorder, sulphur, croton oil, the preparations of mercury, caustics in general, rubefacients, and tincture of arnica may be mentioned.

Uncleanliness.—Uncleanliness, or the presence of effete or foreign matter upon the surface, must likewise be considered as an exciting cause of disease, though in my opinion it is of much less importance than is generally supposed. On the other hand, too much attention to cleanliness may also be followed by an abnormal condition of the skin; the injudicious use of the bath and the constant use of strong soaps are hurtful to the welfare of the integument. The frequency of the bath should be regulated by the condition of the skin, especially as to secretion.

Scratching.—This operation brings about material and often extensive lesions upon the surface, especially in affections of an inflammatory and pruriginous character. It is noted, however, to produce serious lesions only in those cases in which the skin has already become more or less altered by disease. Thus, while in scabies, pediculosis, eczema, and ecthyma scratching often creates a vast amount of local disturbance, greatly complicating the primary disease, it cannot be regarded as fruitful of the same amount of harm upon perfectly sound skin. In the disorders referred to it is, when protracted, the cause of structural changes in the skin, as manifested by excoriations, pigment alterations, and thickening.

Contagion.—Among the external causes the most important remains to be spoken of under this head. The varieties of contagion are not numerous, but they are exceedingly prolific sources of disease. Among the infectious diseases, those which are communicable through the medium of the atmosphere, smallpox, measles, scarlatina, and erysipelas, occupy the most conspicuous place; while the contagious affections, strictly speaking, those which are transmissible only through direct contact, comprise syphilis, contagious impetigo, vaccinia, certain low forms of specific inflammation, as equinia, and the parasites. Many of the cutaneous lesions of syphilis are contagious, and are active agents in the spread of this common malady. The disorders occasioned by the animal and vegetable parasites of the skin form a distinct group; they are all contagious, although not equally so, some being at all times readily communicable, while others manifest their contagious properties only under certain conditions. All individuals, for ex-

ample, do not seem to be to the same extent susceptible to their influence; two persons may, under like circumstances, be exposed to the same parasite, only one of whom will, in all probability, contract the affection. Some persons, as attendants in hospitals and others brought into frequent contact with the contagion, rarely if ever contract these diseases. I am strongly of the opinion, therefore, that with these parasites a peculiar condition of the skin is in most cases essential to the development of the disease.* The vegetable parasites (microscopic fungi) are termed the *achorion Schönleinii*, *trychophyton*, and *microsporon furfur*. To the group of animal parasites belong the itch mite, head louse, body louse, and crab louse, together with several other insects of less importance, as the flea and bed-bug, which under favorable circumstances commit depredations upon the skin.

* Other opinions on this point are held by excellent observers, among whom I may mention Dr. J. C. White, of Boston, whose views may be consulted in an article "On the Etiology of Skin Diseases," read before the American Dermatological Association. Boston Med. and Surg. Jour., Oct. 23, 1879.

PATHOLOGY.

The pathology of the skin is to be studied in the same light as that of other parts of the economy. The skin differs from other membranes only in its anatomy, which being complex is subject to a variety of alterations, some of which are peculiar to this organ. It is liable to the same pathological changes, as, for example, hyperæmia, inflammation, hypertrophy, and atrophy, as take place in other organs, and consequently is to be regarded from the stand-point of general pathology.

The morbid changes which occur in the skin are numerous, and are, moreover, liable to varied modifications. To comprehend them correctly, a thorough knowledge of the normal structures is absolutely essential. All portions of the integument, either separately or together, may be involved; it is found, however, that certain parts are more frequently invaded than others.

The epidermis, partly in consequence of its serving as the external covering of the body and therefore liable to a great variety of influences, and also because it is so intimately associated with the deeper and more important parts, is very frequently the seat of extensive disease. From its position it necessarily assumes a more or less prominent part in the pathology of all cutaneous manifestations. Even in those instances in which the pathological process is situated exclusively in the deeper structures, it is noted to show morbid changes, as desquamation and atrophy, the result of impaired nutrition in the deeper layers. It is a not uncommon seat of hypertrophy, as seen in callosity and like affections. The vegetable parasites also have their habitat here, not infrequently taking complete possession of its outer or horny layer. The delicate rete mucosum, owing to its close proximity to the corium, and the relations which it bears to this structure, is likewise a frequent seat of disease; it is involved in all of the

inflammatory affections, as eczema, herpes, and psoriasis, as well as to a greater or less extent in numerous other diseases.

In the corium, however, occur by far the greater number of morbid processes. The peculiar structure of this tissue, consisting of a net-work of connective tissue, extensive plexuses of blood-vessels, lymphatics, nerves, and a complete system of glandular apparatus, renders it particularly liable to disorder. It is, moreover, through certain organs which have their seat in this tissue, for example, the sudoriparous glands, that numerous effete products of the economy find their exit, some of which give rise to cutaneous disturbance. Hyperæmias all have their seat in the corium; likewise that great class of diseases, the exudations, or inflammations. Hemorrhages also occur here, as in purpura. Hypertrophies, scleroderma, for example, atrophies, new growths of various kinds, all are seated mainly in the corium. Parasites, especially the itch mite and louse, also prey upon this tissue. It is likewise in the corium that certain structural changes of the bloodvessels, lymphatics, and nerves take place, as found in angioma, lymphangioma, and neuroma. Functional disturbances of the nervous system, the so-called neuroses, likewise in part doubtless here manifest themselves.

Both the sebiparous and sudoriparous glandular systems are also attacked by functional disorders, as in seborrhœa and in hyperidrosis; both may, moreover, be the seat of structural alteration, either alone, as in sebaceous cyst, or in connection with disease of other tissues, as in lupus erythematosus.

The hair and nail are also invaded by pathological processes, either idiopathically, as in tinea tonsurans, tinea favosa, and simple hypertrophy, or symptomatically, as in alopecia, eczema, and psoriasis.

Hyperæmia.—Cutaneous hyperæmia consists in an excessive amount of blood in the capillaries of the skin. It is for the most part an ephemeral condition, lasting but a short time, after which the surplus blood returns to its accustomed channels, leaving the skin in its normal state. The seat of the disorder is in the superficial strata of the skin, either in the papillary or deeper layers of the corium. As a rule, it is not followed by desquamation or pigmentation; when these symptoms occur, it is a sign that some slight exudation has taken place. Instead of termi-

nating in this manner, however, hyperæmia may readily pass on into inflammation. Hyperæmia may exist alone, running its course and ending as such, but inflammation cannot exist without having been preceded by hyperæmia. It may arise from numerous causes, some of them quite different in kind, as, for example, heat, cold, and systemic disorder.

The hyperæmias possess certain characteristic features. Their existence is always marked by redness of the skin, varying in shade and tint from pink to dark red. The redness is superficial in character, and disappears altogether under pressure, but is observed to return instantly. The temperature of the skin is frequently elevated, and at times may even be felt with the hand to be markedly so. Hyperæmias are ordinarily acute; they may last minutes, hours, or days. Slight tingling or burning sensations, or merely a sensation of heat, occasionally accompany them. They give rise to a variety of external forms or markings upon the surface, which are usually irregular as to size, shape, and outline.

Anæmia.—Directly the reverse of hyperæmia is the condition termed anæmia, in which there is a deficiency in the amount of blood in the cutaneous capillaries. This state may result from an absolute want of blood in the general system in consequence of hemorrhage, or it may follow disease, as in chlorosis. It is characterized by loss of the natural color of the skin, succeeded by a blanched, whitish or yellowish hue, affecting, according to its cause and nature, either the whole surface or certain regions, as the extremities. It is also attended by a decrease in the temperature of the surface, and at times by cold sweating. Anæmia does not give rise to substantive diseases of the skin, and therefore is of little importance to the dermatologist.

Inflammation.—By this term is understood a pathological process characterized by changes in the circulation and bloodvessels, the exudation of liquor sanguinis and both white and red corpuscles, attended by the symptoms of redness, heat, swelling, and more or less pain.

The changes which take place, with special reference to the skin, may be briefly summed up as follows. Hyperæmia invariably precedes the process. After this condition has existed for a longer or shorter period, the first observable alteration in the tissues, as seen under the microscope, consists in dilatation of the

minute arterial vessels, followed by the same change in the venous circulation. It is found that during the commencement of the inflammatory process the blood flows through the vessels more rapidly than normal, while later this acceleration is followed by a marked retardation in the pace of the current, unaccompanied by contraction in the calibre of the vessels. The blood corpuscles now begin to accumulate in the vessels, which soon become filled, whereupon a condition of stasis occurs. At this stage the white corpuscles are observed to adhere to the sides of the vessels, and to show increased activity of movement, whereby those adjacent to the walls gradually embed themselves in the coats of the artery or vein, and thus, working themselves through, find their way into the tissues without. The red corpuscles in the same way, though in less numbers, also pass through the walls of the vessels. The liquor sanguinis is in like manner freely exuded through the vessels in varying quantity. The process may be either acute or chronic in its course, its duration depending upon the nature of the cause and the continuance of the same in relation to the affected part. It may terminate either in resorption, suppuration, or hypertrophy.

The product of inflammation, that which results from the exudation of the liquor sanguinis and the corpuscles, consists either of a fluid, of a semi-fluid, or of a formed cellular material; not infrequently several of these products are at the same time present. Fluid exudation is composed of a serous, yellowish, gunny, albuminous liquid, containing usually a limited number of blood corpuscles, especially the white. The constituency of the exudation, particularly as to the amount of cellular material, corpuscles, and cells, varies with the disease. Typical fluid exudation is observed in vesiculation, as, for example, in the vesicles of eczema and herpes; occurring in a less pronounced manner, it gives rise to swelling, œdema, and infiltration, which may be either circumscribed or diffused, as in multiform erythema and in erysipelas.

Instead of a fluid the product of exudation may consist of formed elements, cells, unaccompanied to any extent by the escape of fluid, in which event it is firm or plastic, and may be either circumscribed or diffused. Its presence in the skin is manifested by firm formations and infiltrations, examples of which are seen in

certain inflammatory papules and patches, as in eczema and psoriasis. In the process of pustulation, as in the pustule of ecthyma, is seen another form of exudation, characterized by the abundant presence of cellular material, pus corpuscles, suspended in simple fluid exudation.

The lines of demarcation which separate the varieties of exudation are by no means sharp; for, as seen clinically, all degrees of difference exist between the typical fluid, suppurative, and plastic varieties. Very commonly they pass from one to the other by gradual stages; or their course may be arrested at any stage of their existence. Thus, if certain of the exudative diseases, for example, erythema multiforme and eczema, be studied, many stages of exudation may often be observed, giving rise to the papule, papulo-vesicle, vesicle, vesico-pustule, and pustule. Viewed in this light, a number of cutaneous lesions result as the product of exudation, which either run a definite course or are subject to modification.

The product of inflammation may have its chief seat in any of the various parts which compose the integument. Fluid exudation commonly seeks its outlet about the upper strata of the corium and between the papillary layer and the epidermis, or between the layers composing the epidermis, occasioning vesicles, blebs, and pustules; or, taking place in the deeper structures, it assumes the form of a serous infiltration, marked by œdema and swelling of the whole skin. Plastic exudation is usually found to have its seat in the corium and deeper layers, as seen in papules, tubercles, and similarly formed lesions. The product of exudation may disappear by the process of absorption, as occurs in urticaria and in many other diseases, or it may pass on in its course and end in suppuration, as, for example, in furuncle.

Hemorrhage.—Cutaneous hemorrhage consists in the extravasation of blood from the vessels into the surrounding tissues, the result either of diapedesis, or the passage of the fluid through the walls of the vessels without rupture, or of rupture of the capillaries. It takes place in the skin in the same manner as in the other tissues of the body. The lesions consist of variously sized, more or less circumscribed, aggregations of blood, having their seat in the corium and subcutaneous tissues. They possess certain features by which they may always be recognized.

They make their appearance suddenly. Having once assumed a definite size and form they usually retain it, until, by the gradual process of absorption, they fade and finally disappear. They always present a reddish color, varying in shade from light to dark, according to their nature, location, extent, and the length of time they have existed. In addition to the reddish color, they commonly exhibit, particularly about the period of their decline, more or less pronounced yellowish, bluish, and greenish hues. These variations are due to the changes which the coloring matter of the blood undergoes during absorption. The products of cutaneous hemorrhage are peculiar in that they do not disappear under pressure. They are usually upon a level with the surrounding skin, though occasionally they become somewhat elevated in the form of papules or tumors; this, however, rarely takes place except in extensive extravasations or in those cases in which the hemorrhage accompanies other lesions as a secondary symptom, as in hemorrhagic variola. They disappear slowly by absorption, leaving pigmentation of the skin.

Hypertrophy.—By hypertrophy is meant an increase in the amount of a tissue which already exists. It may take place in two ways; either by an increased growth of the already existing elements, or by the formation of new elements of the same tissue. The component parts of the integument are all subject to hypertrophy, the process either confining itself to one structure, as, for example, the epidermis, involving several or all of the parts at the same time. Typical hypertrophy of the epidermis occurs in callosities. In ichthyosis, corns, horns, and warts it involves both the epidermis and the papillary layer of the corium. Simple increase of the normal coloring matter of the skin is seen in lentigo and chloasma. Hypertrophy of the connective tissue is noted in scleroderma; while in elephantiasis Arabum extensive augmentation occurs in all the cutaneous and subcutaneous structures. The hair and nail are also subject to hypertrophy.

Atrophy.—Here the process is exactly the reverse of hypertrophy. It is characterized by a decrease in either the size or the number of the histological elements which make up the structure. When the size alone of the elements is diminished, the condition is termed simple atrophy; when their number is lessened, it is called numerical atrophy. It may be either general, affecting

the whole surface, as in senile atrophy, or partial, involving a certain region, as in atrophic macules and streaks, and in alopecia. All parts of the integument are liable to be attacked. In vitiligo, both marked atrophy and hypertrophy of the normal pigment of the skin go on together. Senile atrophy may be taken as the typical representation of general atrophy of the cutaneous structures. The hair, as in canities or alopecia, in which diseases both the pigment and the structure of the hair are involved, may be cited as one of the most frequent seats of the process. The nail, at times, also suffers.

Atrophy is usually characterized by diminution in size. It may either manifest itself as a simple reduction in size of the part affected, with structural change, or it may result in a degeneration, as in morphœa, in which event the tissues undergo change, a new structure different from the normal elements of the part coming into existence. Atrophy, succinctly stated, is want of balance between the nutritive supply and the part to be nourished.

New Growths.—New growths consist in the development of tissue which is new or foreign to the structure in which it occurs. Various forms of new growths, or new formations; as they are also termed, are met with, composed of tissue either similar to that of which the part is constituted, as, for example, connective tissue, or of a formation of an entirely different character, as cellular material. The connective-tissue new growths find their expression in keloid, fibrous molluscum, xanthoma, and scars. Cellular new formations, a most important pathological group, consist of deposits or infiltrations of cell elements foreign to the normal tissues; here are found lupus vulgaris, lupus erythematosus, rhinoscleroma, lepra, carcinoma, syphilis, and other diseases. Bloodvessels and lymphatics are also the seat of new growths, as seen in angioma and lymphangioma. Clinically, new growths are either benign or malignant.

Parasites.—Parasites of the skin are those organisms which prey upon the cutaneous tissues. They are divided into the vegetable and the animal. Vegetable parasites consist of minute, microscopic plants, which under certain conditions attach themselves to the surface of the skin and there vegetate. They inhabit chiefly the horny layer of the epidermis, although they may penetrate even deeper, as into the follicles, and thus invade more

tender structures. The hair and nail are also attacked by these growths.

Three varieties of fungus are known to invade the skin, each producing disease having distinctive clinical and pathological features. They are the *achorion Schönleini*, the fungus of *tinea favosa*; the *trichophyton*, giving rise to three affections, namely, *tinea circinata*, *tinea tonsurans*, and *tinea sycosis*; and the *microsporon furfur*, the parasite of *tinea versicolor*. These three fungi are similar in structure, being made up of mycelium and spores. They all act as irritants to the skin. The amount of disturbance which their presence exercises varies with the parasite and the region attacked. They may be productive of hyperæmia only, as sometimes occurs in *tinea versicolor*, or they may prove so irritating as to occasion extensive inflammation not only of the skin, but also of the subcutaneous connective tissue, as in *tinea sycosis*.

The group of animal parasites comprise a number of insects, chief among which are the *sarcoptes scabiei*, or itch mite, and the *pediculus*, or louse. The *demodex folliculorum*, an exceedingly minute, inoffensive inhabitant of the sebaceous follicles, may also be here mentioned. Besides these there are others, as the *leptus autumnalis*; *pulex irritans*, or common flea; *cimex lectularius*, or common bed-bug; *pulex penetrans*, or sand-flea; *filaria medinensis*, or Guinea-worm; and certain varieties of flies. These insects, with the exception of the *demodex folliculorum*, all occasion various lesions upon the skin, which are either of an inflammatory or hemorrhagic nature. The ravages of the itch mite give rise to inflammatory lesions similar to those of papular, vesicular, and pustular eczema. The bites of the *pediculus*, flea, and bed-bug produce minute hemorrhages.

DIAGNOSIS.

If satisfactory results are to be obtained in the treatment of cutaneous diseases, it is of the utmost importance that the physician know definitely what affection he has before him. Without a full comprehension of the disorder, and of the course it is likely to pursue, all treatment must be empirical and attended only with hap-hazard results. With the assistance, however, of a method for the examination of cases, and of an understanding of the numerous signs and symptoms encountered, there should remain no great difficulty in the recognition of the diseases. One requisite, it may be stated, is indispensable to success in diagnosis, namely, the power of close observation and scrutiny, without which the student will acquire but a superficial and unsatisfactory knowledge of the subject.

Light.—To examine a case properly the first point to be secured is suitable light. Daylight is an essential, for artificial light, as from a lamp or from gas, is necessarily more or less colored and gives to the skin an unnatural tint, by which it is easy to commit an error. A good white light is the best; under its influence we obtain a more correct idea of the color and shade of the eruption, always an important point, upon which alone may depend our decision. Various signs of value and interest frequently come to notice under a good light which might pass unperceived with an uncertain illumination; thus, a faint patch of *tinca versicolor*, or an early or fading erythematous syphiloderm, might readily escape detection with an imperfect light.

Temperature of the Apartment.—A moderately warm room should be provided. The patient, whether in bed or about, will of necessity be somewhat exposed to the air during the examination; sufficient warmth, therefore, is important both for his comfort and to preserve the ordinary temperature of the skin.

Inspection.—The patient will generally direct our attention to a certain part of the disease, usually that portion which causes him the most annoyance. And here, in the first examination of our patient, arises an opportunity for the exercise of tact. The portion offered to view should be slowly and attentively examined, and perhaps at the same time a few simple questions asked, with the purpose of gaining the confidence of our new patient. The physician should endeavor to obtain this as soon as possible. In women it must not be forgotten that a feeling of diffidence always exists when called upon to expose to a stranger even a portion of their person, and that to overcome this full confidence must be enjoyed. It may now be asked what other parts of the body are involved, and to what extent; and thus by carefully and judiciously placed questions it will be ascertained exactly what regions are affected. If the disease be diffused, the various parts should be inspected one by one. If the case be that of a man or child, it is desirable to examine the whole body, in order that nothing escape observation. This proceeding is the more important as the disease manifests a tendency to be scattered over the body, for, as will be shown presently, much is to be learned from the general features of the eruption.

Examination to be thorough.—The examination during the first interview should be a complete and careful one, for it may happen that by the second visit the eruption will have undergone great change, and, indeed, have lost in a great measure its characteristic features. Cases should always be investigated at the time they first come under notice; in order to know a disease well, it is essential to be familiar with all its phases, and hence every change in appearance should be recorded for reference.

The general color of the skin should be noted, in order to determine its vascularity and its general vitality. It should be felt, in order to ascertain its temperature, whether increased or diminished. In rosacea of the nose, for example, the skin has the appearance of being hot and inflamed, when touch sometimes actually reveals a sense of cold. Its softness or harshness, suppleness or rigidity, should also be ascertained. Certain diseases may be diagnosed by the sense of touch alone, as, for instance, ichthyosis, where its peculiar harshness is characteristic to an educated hand. It should be asked whether the patient is in the habit of

bathing, whether in warm or in cold water, and how often. Baths influence the skin, and especially an inflammatory eruption, in a marked manner.

It should be noted, moreover, whether the body is fat or lean, and to what extent the cutaneous structures are nourished. The condition of the hair-follicles and sebaceous gland ducts should also be observed, whether open or plugged up; the epidermis, whether dry and desquamative or normal; the secretion of sweat, whether scanty or profuse. In order to determine these points, the finger or hand may be passed over the surface, when their presence or absence will be readily recognized.

Constitutional Disturbance.—In the majority of the diseases of the skin no perceptible constitutional disturbance exists, but there are, however, a certain number of instances where marked systemic derangement, as shown by fever, malaise, headache, constipation, and coated tongue, is always present at some time or other during the course. Symptoms of this character should be looked for, and carefully noted when present, for they sometimes prove valuable in enabling us to decide between affections which resemble one another in external form. The exanthemata, for instance, are always accompanied by symptoms of general disturbance, and in their early stages, at times, it is this alone which permits us to diagnose them from other diseases which they simulate upon the skin. Some of the syphilodermata are also accompanied by febrile symptoms.

Age.—The age of the patient is to be taken into consideration; whether an infant, a child, an adult, or an old person. We know that certain diseases occur almost exclusively at certain periods of life; that some affections are found only in adult life, and that others are common only to infants. We know, moreover, that infants and young children are exempt from certain diseases; in questions of diagnosis, therefore, these can at once be excluded from the list. For example, psoriasis, one of the most frequent diseases in adult life, is not found in infants; we need not entertain its occurrence before the third or fourth year, and usually it does not show itself until the tenth or fifteenth year. Epithelioma seldom occurs in early life; it is seen now and then at the age of twenty or thirty, but is not common before forty or fifty.

Sex.—The sex of the patient must likewise be taken into account.

Males are more liable to certain affections than females, and *vice versa*. It is also to be borne in mind that, owing to peculiarities in the anatomy of one sex or the other, certain diseases are found in the one which have no existence in the other, as sycosis, a disease found only in the male.

Temperament.—The temperament, or natural general organization of the patient, should be noticed; whether the complexion be light and florid or heavy and dark in color. It is well recognized that certain forms of disease are prone to come upon those whose constitutions are of a particular type. Diseases of the sebaceous glands, for example, as acne and seborrhœa, are much more common upon those of the florid type. Eczema likewise occurs much oftener, and is more obstinate in character, in those of light complexion.

Habits.—The usual habit of the patient must be inquired into, and his ordinary condition of health, apart from his cutaneous disease, ascertained. The state of the alimentary canal, a region so often the seat of derangement in certain inflammatory diseases of the skin, must be most searchingly investigated; not merely whether the patient suffers from dyspepsia or constipation, for questions of this kind are rarely sufficiently definite to elicit the true condition. Each part of the digestive tract should be gone over in turn with leading questions, assuming, for the most part, that some functional trouble does exist. Here in the alimentary canal we may find the key which will disclose the cause of many skin diseases of an erythematous or inflammatory type. Let the examination, then, in this direction be scrutinizingly conducted. Permit no point, however slight in character, to be passed over lightly, for upon it may depend the exciting cause of the disease.

The tongue should be inspected, and its condition, if whitish, furred, thickened, moist, dry, or fissured, noted. At the same time, inquiry into the usual state of the breath should be made; whether heavy, offensive, or feverish; if impure, the cause should be sought for; frequently it will be found associated with digestive or nervous disorders.

Attention should next be directed to the stomach; and here we must question our patient closely, asking him whether he is subject to eructations, flatulence, acidity of stomach, or indigestion in any other form, or, if the case demand it, using the more popular

terms heart-burn and water-brash. Persons are not infrequently encountered who positively deny all knowledge of any dyspepsia or indigestion, but who eagerly admit suffering from heart-burn. In this connection the quality and quantity of food taken may be inquired into, ascertaining whether the indigestion, for example, is due simply to certain articles of food or to other causes. Finally, the state of the bowels must be investigated, whether normal, temporarily or habitually constipated, or whether irregular in their action. In many cases it is of importance to make an examination of the urine, a procedure which is always in place in the investigation of any extensive or serious disease.

Occupation.—The occupation of the patient sometimes affords a clue to the cause of the disease. It is well known that various kinds of work play a part in the production and continuance of certain forms of disease. An affection, perhaps trivial in itself in character, may be greatly aggravated by exposure to irritating substances. For example, a very slight eczema upon a washerwoman's hand may be much increased by continued work, while ultimately a severe eczema rubrum of the whole arm may result. If she persist in her occupation, the chances are that the affection will continue until she is compelled through sheer distress to desist. Workers in the manufacture of chemicals also suffer at times from artificial diseases; thus, those exposed in mercury and arsenic mines are subject to peculiar forms of eruption; while workers in caustics, acids, iodine, bromine, tar, and other similar substances, may likewise be attacked with simple or peculiar disorders of the skin.

GENERAL FEATURES OF THE DISEASE.

We now come to consider the disease itself, including the lesions of the skin and their peculiarities. They must be attentively studied, for they afford the most accurate information which it is possible to obtain concerning the nature of the case; indeed, they offer the only knowledge which can be absolutely relied upon. One thoroughly familiar with the various cutaneous lesions is, as a rule, enabled to comprehend the whole character of a disease from simple inspection.

Acute or Chronic.—It is, in the first place, to be noted whether the disease is acute or chronic in its course; and, furthermore, the stage in which it appears to be, whether upon the increase or

upon the decline, is to be observed. In the majority of cases this can be learned by examination, or, when this is not possible, from the statement of the patient. It is also important at the same time to inquire into the duration of the complaint, and particularly whether it is a first attack or a relapse.

Extent of Disease.—The extent of the affection may now be ascertained; whether confined to a certain region or occurring in various portions of the body. The regions involved should be noted, for it is well known that some diseases have a predilection for certain parts of the body, as seen, for example, in seborrhœa, aene, and scabies. Other diseases are encountered only in definite localities, for example, syeosis.

Distribution.—The distribution of the eruption may often serve as an aid in diagnosis. The configuration and shape of the patches, and the grouping and arrangement of the lesions, should all be observed. In some diseases, as, for instance, in herpes zoster, herpes iris, and the parasitic diseases, these are peculiar.

Color.—The general color or tint of the disease will almost always throw considerable light upon the nature of the process, as, for instance, in many of the syphilitic eruptions, which possess a brownish-red, raw-ham, or coppery tint, particularly the case in the papular or tubercular formations. In xanthoma the color is distinctly yellowish; in keloid, pinkish or violaceous. In ehloasma the pigmentation is of a pale or dark yellowish, more or less mottled, color. Tinea versicolor is likewise characterized by the same color, in addition to which the epidermis is the seat of furfuraceous desquamation. Tinea favosa also shows a yellowish coloration of the crusts.

Individual Lesions.—It is to be noted whether the individual lesions are of one or of several varieties; moreover, whether they are all in the same stage or in different stages of development. Their anatomical situation and number are also to be carefully inquired into. Finally, it is of the utmost importance to observe their evolution.

Maeules are of very frequent occurrence; some remain as such throughout their entire course, as in ehloasma, vitiligo, and tinea versicolor, while others, beginning as maeules, gradually or rapidly pass into other lesions, as, for example, papules or tubercles, as seen sometimes in tinea syeosis. Hyperæmic affections, as the simple

erythemata, and discolorations of the skin from various causes, including pigmentation, all present examples of macules as their characteristic lesions.

Papules occur either alone or in connection with other structural changes. In eczema the eruption may be altogether papular, or it may be a mixture of papules and vesicles in various stages of development, with scales, crusts, etc. In the small papular syphiloderm, likewise, pustules are often seen intermingled with the papules. On the other hand, in lichen ruber, prurigo, lichen scrofulosus, comedo, and milium, papules, possessing for the most part definite form, color, and structure, are observed. It will be remembered that papules are of several varieties, and that some of them are quite unlike in their form and anatomy.

Vesicles are common, and occur in a number of diseases. Vesicular eczema perhaps exhibits the lesion in its most perfect state; it is also observed highly developed in herpes, miliaria, sudamen, vaccinia, and varicella. Vesico-pustules are seen in the so-called vesicular syphiloderm, in contagious impetigo, and in other affections.

Pustules are met with in variola, pustular eczema, ecthyma, acne, scabies, the pustular syphiloderm, non-parasitic sycosis, herpes zoster, and in other diseases. Vesicles, as has been before stated, very frequently pass into pustules.

The tubercle is often simply an exaggeration of the papule. It is seen in parasitic sycosis, acne, syphilis, carcinoma, leprosy, rhinoscleroma, sarcoma, neuroma, etc. Tumors develop themselves in sebaceous cyst, epithelial molluscum, fibrous molluscum, erythema nodosum, keloid, angioma, lymphangioma, lymphadenoma, neuroma, lipoma, elephantiasis Arabum, syphilis, and in other diseases.

Blebs, varying in size from a small cherry to a goose-egg, are encountered chiefly in pemphigus and allied forms of eruption, herpes iris, erysipelas, syphilis, and leprosy. They are also observed as the result of vesicants, scalds, and burns.

Wheals are usually significant of a peculiarly sensitive state of the skin, which inclines to their ready formation upon slight provocation. They are seen most perfectly developed in urticaria; they also sometimes occur, more or less pronounced in character, in connection with other diseases, as purpura.

Scales are exceedingly common, and are observed in a variety of affections; psoriasis, seborrhœa, squamous eczema, ichthyosis, erythematous lupus, and the vegetable parasitic diseases, all exhibit these products more or less typically. Scales form to a greater or less extent in all of the inflammatory diseases; also in other classes of diseases, as, for example, in some of the hypertrophies, as ichthyosis, and in certain atrophies depending on impaired nutrition.

Excoriations are for the most part met with in those affections which are accompanied by itching and like symptoms; they are seen chiefly in eczema and pruritus, and in pediculosis, scabies, and other parasitic affections. Fissures form in eczema, psoriasis, and syphilis; also in various hypertrophies, as in ichthyosis, wart, and other forms of papillary growth.

Crusts are found as the product of many diseases. They constitute striking lesions in eczema, scabies, ecthyma, syphilis, impetigo, herpes, sycosis, leprosy, carcinoma, and scrofuloderma.

Ulcers occur in syphilis, lupus vulgaris, carcinoma, leprosy, scrofuloderma, herpes zoster, furuncle, carbuncle, etc. Cicatrices, slight or extensive, always follow ulceration. They also follow certain new growths which are unaccompanied by ulceration, as lupus erythematosus.

TREATMENT.

It should always be the aim of the physician to cure the disease before him as rapidly and as effectually as possible; every known means calculated in any way to relieve the disorder should be brought to bear upon the case. No fears need be entertained of "curing the disease too soon," or of "driving in the eruption," as this popular idea is variously expressed; the danger is rather in temporizing with the affection and thus permitting it to obtain the upper hand. It may be very safely stated that the sooner diseases of the skin are relieved the better both for the comfort of the sufferer and for the credit of the physician. Careful inquiry and extended experience show that no injurious results follow the cure of these diseases, whether this take place rapidly or slowly; in very many cases the time occupied in the treatment unfortunately extends over a long period, even under the most favorable circumstances, so that speedy recovery, when it does occur, should always be regarded with favor.

He who would be successful in the treatment of cutaneous affections must first acquire a full knowledge of the principles of general medicine; without this groundwork upon which to stand, his efforts, in the majority of cases, will at best be rewarded by unsatisfactory results. Dermatology, rightly viewed, is but a department of general medicine; its diseases, consequently, are amenable to the same principles of therapeutics which hold good for disorders of other organs. A simple acute inflammation of the skin, for example, calls for the same general plan of management as an acute inflammation having its seat in the mucous membrane or in other tissues of the body. The skin is but a part of the whole organization, and subject, therefore, to general rules of treatment.

Before prescribing for a case there are a number of points which should be taken into consideration, which may be referred to under the following heads.

Previous History.—Not infrequently the previous history of the patient, and more particularly of the disease itself, will prove of assistance in determining upon the most suitable method of treatment. In the first place it is to be ascertained whether the present disease is a first attack or a relapse. If the latter, the course of the former attack, as well as the nature of the treatment, should be inquired into; whether external or internal remedies were employed, and whether they proved successful or otherwise. The preparations used should also, when practicable, be learned from the patient; for a knowledge of past treatment and its results may occasionally save both time and trouble. Idiosyncrasies, it must be borne in mind, are encountered from time to time; hence, for example, when we are assured by a patient that arsenic taken internally or tar used externally invariably disagrees, the information enables us to be cautious as to the manner of prescribing these remedies.

Present General Condition.—The general condition of the patient should be carefully ascertained. At a glance it is noted whether the patient is or is not in apparent good health; whether, for example, there is a tendency to plethora or to anæmia, or to chlorosis. In this connection it is important to determine the presence or absence of constitutional symptoms; whether the disease is strictly local or not. The appetite should be inquired after; likewise the state of the alimentary canal. The tongue should be examined, if normal or otherwise, and the existence or not of dyspepsia questioned. The state of the bowels requires special attention; if natural, irregular, or constipated in their function. The character of the biliary and renal secretions also calls for investigation. The condition of the nervous system, moreover, should be determined; the amount and kind of sleep enjoyed, the state of the mind, whether healthful or morbid, depression of spirits, or other like symptoms, should all be noted.

Nature of the Disease.—Directing attention now to the skin itself, it is all-important to form a definite idea as to the nature of the process present; whether, for example, it is a simple hyperæmia, an inflammation, an hypertrophy, or a combination of

processes. Recognizing the pathological process, less difficulty is experienced for the diagnosis.

The duration of the disease should be in like manner ascertained; its natural course studied; whether localized to a small area or diffused, and its tendency to confine itself or to spread. It is important, also, to determine before prescribing whether it is acute, subacute, or chronic, and, still further, to recognize the precise stage of the process. The subjective symptoms, moreover, should be learned from the patient; whether pain, burning, or itching is experienced, and, if present, the degree of the symptom.

Cause of the Disease.—The importance of forming a correct opinion as to the cause which has given rise to the affection is so apparent as scarcely to call for more than mention. Upon a proper interpretation of this point will depend the success or the failure of treatment. It is only by treating the cause in many cases that permanent relief may be looked for. Too much study and investigation can scarcely be devoted to a comprehension of the cause as a whole; let it be remembered that each case demands special study and a plan of treatment adapted to its needs. The lesions themselves, as a rule, except in the case of local diseases, call for but secondary treatment; they are of little consequence when compared to the cause which is continually producing new lesions. When, however, as too frequently occurs, no cause for the disease is to be detected, the lesions themselves should be vigorously attacked by every means at hand, with a view of removing them as soon as possible. In those instances in which the affection is known to be altogether local in its origin, nothing further than the treatment of the lesions is called for.

Method of Treatment.—For the relief of diseases of the skin, speaking in general terms, both constitutional and local remedies are demanded. They may be prescribed conjointly or alone, according to the nature of the disorder. Experience proves conclusively that in many cases constitutional or internal treatment is by far the most effective, while in other instances local measures offer not only the best, but at times the only, means of relief: such being the case, I think, therefore, it is plain that neither method employed to the exclusion of the other is capable of yielding the best results which it is possible to obtain. Where, however, external means are sufficient to relieve the trouble both

promptly and permanently, internal treatment is not only superfluous, but may be productive of harm.

Viewing the subject as a whole, I am strongly of the opinion that the most satisfactory results are to be obtained from the conjoint employment of both plans of treatment. The affections, and more particularly the individual cases, in which either local or constitutional remedies are to be prescribed, can be determined only by taking into account both the nature and the cause of the complaint under consideration. No positive rules can be given for the use of either one or the other class of remedies, for it will be found that the skin in a state of disorder is a sensitive organ, subject to no fixed laws of behavior. The remedy suitable for one stage is frequently not only powerless but often absolutely injurious in another stage of the same disease.

CONSTITUTIONAL TREATMENT.

Under this heading may be considered the following:

Hygiene.—In this connection may be mentioned the benefits to be derived from attention to the ordinary rules of hygiene. In not a few disorders, especially those of a chronic nature, much is to be gained from regulated and judicious exercise, more particularly out-door exercise suited to the demands of the patient, taken in sunshine. The advantages resulting from this adjuvant in therapeutics are most strikingly seen in cases in which there are marked elements of chlorosis or of disturbance of the nervous system. The effect of change of climate upon certain diseases is at times followed by the most salutary results. In certain rebellious cases of urticaria, psoriasis, furunculus, and eczema, the change may be followed by decided, and at times prompt, relief; also, in leprosy and allied diseases.

Food.—For the permanent relief of certain disorders the use of a regulated diet is most important. The kind and quality of the food consumed are both considerations of consequence in the treatment of a number of diseases. The diet should always be directed by the physician, and should consist of those articles which are suggested as being proper for the case under care. Beneficial results may also sometimes be obtained from a complete change of diet, as in eczema and psoriasis.

Cod-liver Oil.—This remedy is an exceedingly valuable one.

It is especially useful in all those cases in which the general health has become impaired through the long-continued consumption of improper and insufficient food, bad hygienic surroundings, and like causes. It is prescribed to greatest advantage in serofuloderma, affections of the sebaceous glands, lupus, and eczema. In certain cases of eczema occurring in strumous children it is of particular value; also in some cases of relapsing ringworm. The dose should always be liberal, varying from a fluidrachm to a half-ounce or more, according to the age of the patient and the tolerance of the stomach.

Iron.—The preparations of iron must also receive mention as being useful in the treatment of skin diseases. Their administration, alone or in combination with other remedies, is indicated in a number of affections. They are given with benefit in diseases dependent upon chlorosis, and also in inflammatory diseases accompanied by general impoverishment, as in some forms of anæmia, eczema, and psoriasis. Other disorders may also be benefited by its judicious use. The wine of iron may here be referred to as a desirable preparation, suitable for many conditions where a mild tonic is required. It constitutes an excellent vehicle for the administration of both arsenic and iodide of potassium.

Quinine.—This may be given with advantage in many diseases, as, for example, in certain of the erythematous inflammations, as erysipelas, and in elephantiasis Arabum. It is found, however, to be of particular value in the neuroses, as in pruritus, also in urticaria, and in other diseases complicated by nervous disturbance; also in diseases accompanied by a malarial element. It is sometimes valuable in furuncle.

Arsenic.—As is well known, arsenic has long been held in high esteem as a remedy in cutaneous medicine. At the present day there exists a great diversity of opinion concerning its worth as a therapeutic agent against this class of diseases, certain dermatologists claiming to derive positive good from its employment in a number of affections, while others, of equal experience are inclined to place but little reliance upon its curative powers. Without hesitation I would express myself of the opinion that it is a remedy of very great value; that it is, in fact, the most valuable of all internal remedies in the treatment of many skin diseases; but the cases in which it is prescribed must be selected if successful results

are to be looked for. To say that arsenic is of use in "diseases of the skin," viewed collectively, is to make an assertion so vague and meaningless as to be of no practical value. Not only is it necessary to specify the disease, but also the stage of the affection, if we would employ it successfully.

Arsenic exerts its influence chiefly upon the mucous layer of the epidermis. Hence it is found that diseases involving the more superficial parts of the skin are most benefited by its administration. It possesses but little power over the affections which have their seat in the deeper structures. Its action upon the skin is often slow, weeks and months sometimes being requisite to produce the desired result; improvement once obtained, it is generally expedient to allow the patient to continue its use for some weeks after all symptoms of disease have disappeared, perhaps in smaller doses. It should not be given in the acute, inflammatory stage of any disease of the skin; it should never be prescribed when there is great heat, burning, intense itching, or rapid cell change. It is not only of no good at this time, but is often positively injurious, tending to augment the activity of the morbid process. It stimulates the rete, when rest is demanded. Its administration, then, in whatsoever disease, should be withheld until the acute symptoms have completely subsided.

It is unquestionably of great value in psoriasis; but it is not of benefit in every case, nor should it be directed in all stages of this disease. Where the process is very active, and attended with intense hyperæmia, it as a rule only increases the already inflammatory condition. The more active the cell proliferation the less probability is there of its being beneficial. On the other hand, the more indolent and sluggish the process the greater the chance for improvement. It may be stated, as a rule, that it should be withheld until the disease has settled in its course.

It is of decided service in certain varieties of eczema, especially in the papular and squamous forms; also, I think, in those cases where the true primary lesions are ill defined, and where there is but slight infiltration of the skin. Certain persistent localized papular and abortive vesicular eczemas, as frequently seen, for example, about the fingers, also often readily yield to it. Chronic infantile eczemas, unaccompanied by digestive disturbance, are at times most favorably influenced by the remedy. As is well

known, children stand relatively large doses. Viewing the subject in a broad light, however, I may state that too much should not be expected of arsenic in eczema. Many cases are in no degree improved by its use; some, on the contrary, are aggravated.

Pemphigus is often permanently relieved by its judicious use. Experience has shown it to be of great value in many cases of this disease. Discrimination must be made, however, between true pemphigus and pemphigoid eruptions. In the later stages of lichen ruber it is also prescribed with the greatest advantage. In certain forms of acne, especially in those cases where the lesions are numerous and of a fine papular character, its administration is frequently followed by good results.

The preparations which it is advisable to employ are arsenious acid, liquor arsenici chloridi, and liquor potassii arsenitis (Fowler's solution). The latter will be found the most desirable form for ordinary use. Arsenious acid is given in pill form, usually combined with sugar of milk or with black pepper and powdered liquorice, the latter combination constituting the so-called "Asiatic pill," which may be prescribed in varying strength, suitable to the case. The following is the formula somewhat modified: Arsenious acid, two grains; black pepper and liquorice powder, of each thirty-two grains, with a sufficient quantity of mucilage; mix and divide into thirty-two pills. S.—One to be taken three times a day, directly after meals. The strength of the pill may be altered to suit the case.

The liquor potassii arsenitis is best given combined with a bitter tincture, or with the wine of iron, or with an elixir of calisaya bark. Prescribed in this way there is less likelihood of gastric and intestinal derangement. The mode of ordering the solution pure, and directing so many drops to be taken at each dose, is, I think, objectionable for many reasons, to which it is unnecessary to refer. The average dose which will be found to be suitable to the majority of individuals is three minims. Four or six minims, and even much larger doses, will often be tolerated; out of a number of patients, however, comparatively few will be able to take more than three or four minims for any length of time without derangement of the system. The solution of the chloride of arsenic is prescribed in about the same dose as Fowler's solution. Arsenic should always be given either with the food or directly

afterwards. Its toxic effects should be watched for and guarded against. Occasionally they appear insidiously. Idiosyncrasies are also liable to be met with.*

Phosphorus.—The diseases in which this substance may be prescribed are those in which iron and arsenic are indicated. It is not, however, well tolerated by the stomach, and it is partly on this account, probably, that the views of observers as to its efficacy are conflicting. It has been used with success in psoriasis and eczema, and in lupus and other diseases. It is best administered in the form of a phosphorated oil enclosed in capsules, the dose being about one-fiftieth of a grain of the phosphorus; also in the form of phosphide of zinc.

Tar, Carbolic Acid.—Both of these substances are at times employed internally with good result, as in psoriasis, eczema, and pruritus. Tar should be ordered in capsules; carbolic acid may be given in pills.

Mercury.—The preparations of this metal are sometimes used for disorders of the skin other than those of a syphilitic nature. Thus, minute tonic doses of corrosive sublimate, alone or with bark, are often taken with benefit in certain chronic inflammatory diseases accompanied with thickening, as, for example, eczema. In syphilitic diseases they are of course invaluable. The corrosive chloride, protiodide, biniodide, mercurial pill, and gray powder are the forms in which it is commonly prescribed. The effect of the mercurials upon the system should always be noted with the greatest care, and in no case should they be given until ptyalism has been produced. Mercury is also combined most advantageously with iodide of potassium. Here may be mentioned Donovan's solution (*liquor arsenici et hydrargyri iodidi*), a remedy of some repute in the treatment of syphilitic manifestations.

Iodide of Potassium.—This finds its chief use in scrofuloderma, lupus erythematosus, lupus vulgaris, and the syphilodermata. In the last named class of affections it may be administered either alone or in combination with mercury. It is prescribed in doses varying from two to fifteen or twenty grains, largely diluted with

* The value of arsenic in skin diseases has been ably considered by Bulkley, in a monograph entitled "The Use and Value of Arsenic in the Treatment of Diseases of the Skin." New York, 1876.

water. When used in non-syphilitic diseases the dose should be small. It must be remembered that the remedy itself is capable of producing varied forms of eruption.

Aperients.—This class of remedies is of great service in many of the inflammatory diseases. Saline laxatives, as the sulphates of magnesium and sodium, cream of tartar, and Rochelle salt, are to be specially recommended, and may be given with marked benefit in the early stages of the majority of the acute inflammatory diseases. They should, however, be used with discretion, and never to the extent of violent purgation. They are also found to be useful when prescribed with other substances, as, for example, iron, acids, and barks, in the form of a draught.

Mineral Spring Waters.—These, especially those possessing cathartic and alterative properties, are at times taken with benefit. Among those which have proved of value in my experience are the various sulphur waters, as those of Virginia, Kentucky, and New York. The alkaline waters, as the Carlsbad and Vichy springs, are also frequently beneficial in certain cases of eczema and psoriasis.

Diuretics.—Remedies exerting an eliminating influence upon the kidneys are administered with advantage in highly inflammatory diseases complicated with defective excretion, as, for example, in some cases of eczema and psoriasis. Saline, non-stimulating preparations are preferable, the citrate, acetate, and bicarbonate of potassium, in twenty or thirty grain doses, being those from which the most relief is usually to be derived. Taraxacum may also be mentioned. The alkalies are found to be of particular value in cases dependent upon or complicated with gout or rheumatism. The condition of the urine should receive due attention, especially in certain of the acute inflammatory diseases, as urticaria, and in pruritus.

LOCAL TREATMENT.

External remedies are used with the view either of temporarily relieving or of curing the condition. They are numerous, and include a great variety of substances, which are employed either alone or more often in combination. They may be conveniently considered under the following heads.

Baths.—Water, used for the purpose of cleansing the skin and

removing from the surface effete matter, as scales and crusts, or in the form of baths, simple or medicated, is an essential therapeutic agent. Its employment should, however, always be directed with judgment, inasmuch as in certain morbid conditions it is liable to produce more mischief than good. Where plain water is required, care should be taken to procure soft or rain water; many waters are hard and irritating to sensitive skins. The simple warm bath is especially serviceable in inflammatory diseases, as psoriasis, and in hypertrophies of the epidermis and corium, for example, ichthyosis.

Medicated baths are prepared with various substances. Starch, bran, gelatine, and the like, are added to the plain bath for the purpose of obtaining a bland, unirritating water, which finds its chief use in highly inflammatory conditions. Tar and sulphur, as well as other remedies, are also prescribed in the form of baths. Alkaline baths, made with the carbonates of sodium and potassium, or borax, are of decided value in the neuroses and in parasitic diseases; also in the acute and in the desquamative stages of some of the inflammatory affections, as psoriasis. Cold, douche, vapor, and hot-air baths are likewise often useful. The continuous bath, so constructed that a patient is enabled to remain continuously in the water for days or weeks at a time, is valuable in the treatment of extensive chronic inflammations, as psoriasis and pemphigus, and in burns.

Soaps.—Two varieties of soap are made use of, the soda or hard, and the potash or soft. Both are important therapeutic agents, and are brought into frequent requisition for various purposes. Castile soap, the representative of the hard soaps, finds its office mainly in cleansing the skin of simple extraneous matter. It is a neutral soap, is bland in its action, and may be advantageously employed in many diseases preparatory to the application of other remedies.

Soft soap, termed also *sapo mollis* and *sapo viridis*, is a soft, brownish or greenish soap, containing an excess, in varying amounts, of caustic potash. The fatty substance from which it is made may be either animal fat or vegetable oil; it may further be either pure or impure in quality, points of difference in the manufacture which account for its variable characters as to consistence, color, odor, etc. It is an indispensable remedy in the

hands of the dermatologist; it may be used alone, with water, with alcohol in the form of a tincture, or in combination with oils and other substances. It is an invaluable detergent agent, and is usually sufficiently strong to free the skin of scales, crusts, and other foreign matter. Its effect upon the skin is mildly caustic. When applied for any length of time or repeatedly, its caustic property should be counteracted by the subsequent application of some oily or fatty material, to prevent roughness, chapping, or fissuring, and contraction of the epidermis.

Medicated soaps, as, for example, those containing tar, carbolic acid, thymol, and sulphur, are at times serviceable in the milder forms of disease; as a rule, however, better results are to be obtained from the same substances in other form. They may sometimes be employed with benefit as adjuvants.

Bandages.—Appliances of this kind are often made use of with advantage for the purpose of protection or of affording support to the skin and subcutaneous tissues. In eczema, elephantiasis Arabum of the extremities, and ulcers, for example, the plain roller or rubber bandage is employed with the greatest benefit.

Poultices.—Preparations of this kind have but a limited use in dermatology. They are occasionally useful for removing large, adherent masses of crust, as in severe and long-standing eczema of a part. They are also employed to relieve pain and to hasten suppuration in furuncle, carbuncle, and like inflammations. They may be prepared with flaxseed meal, potato starch, or bread and milk, should always be applied as hot as the part will bear, and should be repeatedly renewed.

Dusting Powders.—These play an important part in the management of certain of the hyperæmic and inflammatory disorders, as in erythema, intertrigo, and eczema. They are also employed in diseases of the sweat glands. They are composed either of one or of several substances, mixed in varying proportions. Wheat starch, corn starch, oxide of zinc, lycopodium, asbestos, oleate of zinc, boracic acid, alum, salicylic acid, French chalk, talc, orris root, and arrow root, reduced to fine, impalpable powders, are all used for this purpose. They should be prepared with care, and should be perfectly smooth and entirely free from grit. The blander substances serve to protect the surface from the influence of the air, from irritation and rubbing, and absorb exuded fluids.

Lotions.—Lotions constitute a desirable and cleanly means of applying a number of remedies. In many instances they are better adapted for the relief of disease than ointments; this is particularly the case when the affection occupies a large amount of surface, as, for example, in pruritus. They may be classified for convenience into those which are soothing, stimulating, and astringent.

Soothing lotions are usually aqueous preparations containing certain substances which allay nerve irritation and give ease; those in common use are black wash, lead water, glycerine and water in various proportions, various glyceroles, as of lead and bismuth, weak solutions of carbolic acid, thymol, hydrocyanic acid, boracic acid, and the weaker alkalies. These find their use chiefly in the inflammatory affections, and most frequently in eczema.

Stimulating lotions commonly contain alcohol, certain oils, aqua ammoniæ, acetic acid, cantharides, carbolic acid, corrosive sublimate, tar, alkalies, camphor, thymol, benzoic acid, chloral, sulphur, sulphuret of lime, etc.; often several of these substances are contained in the preparation. They prove of value in affections of the scalp, as in seborrhœa, eczema, and psoriasis, where oils and ointments are contra-indicated on account of the hair. They are also of service in diseases of the glands, and in chronic inflammations, as in acne, acne rosacea, and eczema. Astringent lotions are made with alcohol, tannic acid, alum, iron, vinegar, and like substances; their principal employment is in hemorrhages and in excessive sweating.

Oils.—Natural oils may be either bland or stimulating. To the former class belong olive oil, oil of sweet almond, linseed oil, castor oil, cod-liver oil, and the petroleum ointments. Here may also be mentioned glycerine, one of the most useful of external remedies. Bland oils are serviceable in softening scales and crusts, and for anointing the surface in a variety of conditions. They also enter largely into the composition of ointments and lotions. Examples of stimulating oils are found in the derivative oils from tar, as oil of cade and oil of birch, and in oils derived from certain nuts and balsams, as the oil of cashew-nut, gurjun balsam, etc.

Ointments.—Ointments constitute the usual and by far the most valuable means of applying remedies to the skin. They are made with various fats, commonly with lard, and contain one or more

substances upon which their chief virtue depends. Like the lotions and the oils, they may be divided into those which have a soothing effect and those which stimulate.

Sedative Ointments.—In this class may be placed simple ointments and cerates, glycerine ointments, ointments of cacao butter and spermaceti, cucumber ointment, petroleum ointments, diachylon and oxide of zinc ointments, and other preparations possessing similar properties. They are bland in their nature, and are employed chiefly in inflammatory conditions, with the view of protecting the surface and of allaying irritation. Diachylon ointment, prepared either from diachylon plaster or from litharge with olive oil, is a useful remedy in the treatment of a number of conditions. Oxide of zinc, oleate of zinc, and oleate of bismuth ointments are likewise valuable preparations, finding their principal uses in eczema. These ointments are frequently made to serve as vehicles for the application of other remedies.

Stimulating Ointments.—These are the most efficacious of remedies. They are made with a great variety of substances, which are employed either alone or in combination. Tar and its derivatives, for instance, oil of cade and oil of birch, may first be mentioned; they are especially valuable in eczema and psoriasis. Carbolic acid occupies a position scarcely less important than tar, being one of our most useful remedies. Thymol is also valuable. The preparations of mercury, including the red oxide, nitrate, red iodide, mild chloride, corrosive chloride, ammoniated mercury, and mercury itself, are all employed, and are highly prized for their virtues in numerous and different diseases. Sulphur, and its many combinations, as the sulphides and sulphites, may also be referred to as among the more important remedies of this class. Here may be mentioned goa-powder and its derivative chrysophanic acid (chrysarobin); also pyrogallie acid. Camphor and chloral are also occasionally used. Stimulating ointments are made in various strengths, from a few grains to several drachms of the active ingredient to the ounce of simple ointment, according to the nature of the case and the effect desired.

Caustics.—Under this head may be classed those substances and preparations which are discutient in their effect, as well as those which are truly caustic. To the former belong iodine, *sapo viridis*, mercurials, acetic acid, cantharides, and the like. Among the

stronger remedies, nitrate of silver occupies a conspicuous place ; it is employed both in stick form and in solution, and is of service where a mild caustic or stimulating effect is desired, as in lupus, and in ulcers ; also in various superficial formations.

Caustic potash, either in stick form or in solution, is a valuable, potent, and thoroughly efficient escharotic. It is a powerful remedy, exceedingly rapid in its destructive effects, and should always be used with caution. It is applied with good result in new growths and hypertrophies, such as epithelioma, lupus erythematosus, lupus vulgaris, and wart, and in other affections. It may be employed either in its pure state, or weakened by admixture with other substances, as lime, in the preparation known as *potassa cum calce*. The chloride of zinc is likewise a strong caustic, producing its effect slowly, but occasioning great pain both at the time of the application and for some time after the operation. Chromic acid is a mild caustic, useful in epithelial hypertrophies, as warts and like affections. Ethylate of sodium and pyrogallie acid, both valuable, may also be here referred to. Arsenic is chiefly employed with other substances in the form of ointments and powders ; it is prescribed in certain cases of lupus and epithelial cancer, and as a stimulating dressing in indolent ulcers. As a caustic it is slow but destructive in its action ; it possesses the peculiarity of attacking diseased tissue in preference to healthy structures.

Nitric acid and the acid nitrate of mercury are well adapted for the treatment of venereal productions, as chancre, wart, etc. They should always be applied with care. Acetate of zinc, nitrate of zinc, carbolic acid, corrosive chloride of mercury, and other similar agents, are occasionally used for purposes of superficial cauterization.

The great value of the mechanical treatment of certain diseases, especially by means of the dermal curette, may here be referred to. Hypertrophies, as wart, and new growths, as lupus vulgaris, scrofuloderma, epithelial cancer, may all, in suitable cases, be treated successfully by this means.

Parasiticides.—These are remedies which act destructively upon both the vegetable and the animal parasites of the skin. Sulphur and its compounds, including sulphite of sodium, hyposulphite of sodium, and sulphuret of potassium, are deserving of the first mention, and are effectual in both groups of diseases. Styra

and Peruvian balsam are especially valuable in destroying the itch mite; staphisagria, eoeculus Indiens, white precipitate, mercurial ointment, corrosive sublimate, and petroleum are the best remedies against the pediculus. The vegetable parasites are acted upon by a number of articles, among which the mercurials, more particularly corrosive sublimate, the red and white precipitates, the yellow sulphate and the red sulphuret, are to be considered as holding a high position. Other remedies also serve the same end, as, for example, tar, creasote, carbolic acid, salicylic acid, thymol, boric acid, veratria, galea-powder, carbonate of potassium, sulphuret of lime, borax, alcohol, iodine, cantharides, etc.

Electricity.—This therapeutic agent may at times be applied with good result in certain affections, especially in those in which there is disturbance of the nervous system, as in herpes zoster, and in the neuroses; also in certain atrophies. The galvanic current—from five to fifteen cells—is that from which perhaps the best effects are obtained; but the faradic current is also serviceable. The application may be either central or directly to the disease of the skin. Electrolysis, or the decomposition of tissues by means of the galvanic current, is of value in the treatment of certain tumors, tubercles, naevi, hypertrophies, connective-tissue growths, etc. It is accomplished by means of needles, in the place of ordinary electrodes, inserted in the tissues through which the current is discharged. The galvanic current is also useful in eradicating superfluous hairs.

PROGNOSIS.

Concerning prognosis little is to be said in a general way. The question is with individual cases of disease rather than with classes. Diseases of the skin are either acute or chronic; some are invariably acute in their duration, as in the case of the herpes group; others are almost always chronic, as, for example, psoriasis. The majority of disorders, however, taking a view of the whole field, incline to chronicity; many of them are exceedingly obstinate, lasting years; others, as those of a congenital nature, usually continue throughout life.

Anomalies of secretion are often rebellious to treatment, as is seen sometimes in seborrhœa and in hyperidrosis. The active hyperæmias, as long as they remain such, are ephemeral derangements, and need occasion no anxiety. But it must be remembered that if the action of the cause is prolonged or carried beyond a certain point, the process becomes inflammatory, and the prognosis, consequently, more serious.

Of inflammatory diseases as a class it is not possible to speak in general terms; for while some always terminate favorably and within a definite period, others may end disastrously, as, for example, pemphigus; this latter result, however, is rare. A number of the inflammatory affections tend to become chronic, lasting not infrequently months or years; as instances, eczema, psoriasis, and non-parasitic syeosis may be cited.

Hemorrhages are to be looked upon either in a favorable or in an unfavorable light according to their severity and extent. Hypertrophies, as a rule, have a benign character; they are slow in their course, and often continue a lifetime. Some of them are incurable. The same may be said of atrophies.

Neoplasmata, or new growths, are either benign or malignant.

The prognosis will depend upon the nature of the case under consideration. Lupus, syphilis, leprosy, carcinoma, and sarcoma must all receive grave prognoses; they are serious maladies, several of which frequently terminate fatally; on the other hand, certain affections of this class, as fibrous molluscum, give rise to no trouble beyond annoyance and disfigurement.

The neuroses are exceedingly variable in their duration; at times they yield readily to treatment, in other cases they are most obstinate. They are generally distressing to the patient. The parasitic affections are all curable.

CLASSIFICATION.

The use of a classification in the consideration of diseases of the skin is to group together, for purposes of study and reference, affections which are similar in their intimate nature. Various ways of accomplishing the same object have been proposed. The method which appears to me to be the most practically useful, and at the same time capable of the most extended and scientific elaboration, is based upon anatomy and pathology.

The arrangement here presented is that of Hebra modified. It rests, as will be seen, upon anatomical and pathological grounds, with the exception of the last class, which is etiological. The first class includes functional disorders of the glandular apparatus unaccompanied primarily by inflammation. In the majority of instances, however, the nature of the pathological process, together with the particular structure involved, serves as the basis for the grouping of the diseases.

CLASS I. ANOMALIÆ SECRETIONIS—DISORDERS OF SECRETION.

SEBORRHŒA.	}	Sebaceous Glands.
COMEDO.		
MILIUM.		
SEBACEOUS CYST.		
HYPERIDROSIS.	}	Sweat Glands.
ANIDROSIS.		
BROMIDROSIS.		
CHROMIDROSIS.		
SUDAMEN.		

CLASS II. HYPERÆMIÆ—HYPERÆMIAS.

ERYTHEMA SIMPLEX.	}	Erythematous.
ERYTHEMA INTERTRIGO.		

CLASS III. EXSUDATIONES—INFLAMMATIONS.

ERYTHEMA MULTIFORME.	}	Erythematous.
ERYTHEMA NODOSUM.		
URTICARIA.		
ECZEMA.	}	Erythematous, Vesicular, Pus- tular, Papular, Squamous.
HERPES.		
HERPES ZOSTER.	}	Vesicular.
HERPES IRIS.		
MILIARIA.		
PEMPHIGUS.	}	Bullous.
LICHEN RUBER		
PRURIGO.	}	Papular.
LICHEN SCROFULOSUS.		
ACNE.	}	Pustular.
ACNE ROSACEA.		
SYCOSIS NON-PARASITICA.		
IMPETIGO.		
IMPETIGO CONTAGIOSA.		
ECTHYMA.		
PSORIASIS.	}	Squamous.
PITYRIASIS RUBRA.		
FURUNCULUS.	}	Phlegmonous.
ANTHRAX.		
DERMATITIS.	}	Erythematous, Vesicular, Bullous, etc.

CLASS IV. HÆMORRHAGIÆ—HEMORRHAGES.

PURPURA.	}	Corium, etc.
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CLASS V. HYPERTROPHIÆ—HYPERTROPHIES.

LENTIGO.	}	Pigment.
CHLOASMA.		
NÆVUS PIGMENTOSUS.		
MOLLUSCUM EPITHELIALE.	}	Epidermis, Papillæ.
CALLOSITAS.		
CLAVUS.		
CORNU.		
VERRUCA.		
ICHTHYOSIS.		
KERATOSIS PILARIS.		

SCLERODERMA	}	Corium.
MORPHŒA.		
SCLEREMA NEONATORUM.		
ELEPHANTIASIS ARABUM.		
DERMATOLYSIS.		

HYPERTROPHY OF THE HAIR.	}	Hair.
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HYPERTROPHY OF THE NAIL.	}	Nail.
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CLASS VI. ATROPHIÆ—ATROPHIES.

ALBINISM.	}	Pigment.
VITILIGO.		
CANITIES.		

ATROPHIA CUTIS.	}	Corium.
ATROPHIA SENILIS.		
STRIÆ ET MACULÆ ATROPHICÆ.		

ALOPECIA.	}	Hair.
ALOPECIA AREATA.		
ATROPHY OF THE HAIR.		

ATROPHY OF THE NAIL.	}	Nail.
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CLASS VII. NEOPLASMATA—NEW GROWTHS.

KELOID.	}	Connective Tissue.
MOLLUSCUM FIBROSUM.		
XANTHOMA.		

RHINOSCLEROMA.	}	Cellular.
LUPUS ERYTHEMATOSUS.		
LUPUS VULGARIS.		
SCROFULODERMA.		
LEPRA.		
SYPHILODERMA.		
CARCINOMA.		
SARCOMA.		

NÆVUS VASCULOSUS.	}	Blood vessels.
TELANGIECTASIS.		

LYMPHANGIOMA.	}	Lymphatics.
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NEUROMA.	}	Nerves.
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CLASS VIII. NEUROSES—NEUROSES.

HYPERÆSTHESIA.	}	Hyperæsthesia.
DERMATALGIA.		
PRURITUS.		
ANÆSTHESIA.	}	Anæsthesia.

CLASS IX. PARASITÆ—PARASITES.

TINEA FAVOSA.	}	Vegetable.	
TINEA TRICHOPHYTINA.			T. CIRGINATA.
			T. TONSURANS.
			T. SYCOSIS.
TINEA VERSICOLOR.	}		
SCABIES.	}	Animal.	
PEDICULOSIS CAPITIS.			
PEDICULOSIS CORPORIS.			
PEDICULOSIS PUBIS.			

PART II.

SPECIAL DISEASES.

CLASS I.

ANOMALIÆ SECRETIONIS—DISORDERS OF SECRETION.

THIS class comprises an important group of diseases. It is composed of the various functional disorders of the sebaceous and sweat glands. The affections here considered are strictly those of abnormal secretion. Diseases of the glands accompanied by inflammation, as, for example, acne, find their place under Inflammations.

SEBORRHŒA.

Syn., Pityriasis; Stearrhœa; Steatorrhœa; Fluxus Sebaceus; Cutis Unc-tuosa; Acne Sebacea; Seborrhagia; Tinea Furfuracea; Tinea Amiantacea; Tinea Asbestina; Ichthyosis Sebacea; Dandruff; Dandriff; *Germ.*, Schmeer-fluss; *Gneis*; *Fr.*, Acné Sebacée.

SEBORRHŒA IS A DISEASE OF THE SEBACEOUS GLANDS CHARACTER-IZED BY AN EXCESSIVE AND ABNORMAL SECRETION OF SEBACEOUS MATTER, FORMING UPON THE SKIN AN OILY COATING, CRUSTS, OR SCALES.

Symptoms.—Seborrhœa may appear upon any portion of the body, though, like the majority of cutaneous affections, it has favorite localities for its development. By far the most common seat is the scalp; next in frequency it occurs about the face. Upon

the body it is seen most often about the back, between the scapulæ, and upon the chest over the region of the sternum. It occurs at all periods of life, from birth to mature age. In newly born infants it constitutes the *vernix caseosa*, or *smegma*, and may be present in a slight degree or as a thick coating involving the whole body, and is to be viewed as a physiological rather than a pathological process. It is liable to remain about the scalp in infants throughout the first few months of life, in the form of a more or less compact, dirty-yellowish, crusted or scaly accumulation.

The course of the disease is variable. At times it is a very slight affection, disappearing either spontaneously or with simple treatment. In other instances it is severe, and may continue for years unless properly managed; even with judicious treatment it may prove obstinate. The general condition of health not infrequently influences its course in a marked manner; as the tone of health improves, the glands, as a rule, tend to assume normal action.

The state of the skin itself varies according to the amount of disturbance as well as with the character of the secretion. In the majority of instances the disease is not inflammatory, there being neither decided redness of the surface nor heat. In some cases, on the other hand, intense hyperæmic or even inflammatory signs are present. The process tends to vary in intensity from time to time. The subjective symptoms are variable. Itching is frequently complained of, and is at times the source of considerable distress. In the more inflammatory forms, as seen sometimes about the cheeks, decided burning sensations are complained of.

The general health of patients suffering from seborrhœa, especially in marked examples, is usually below standard. They frequently suffer from anæmic or chlorotic symptoms, characterized by pallor of the face, cold hands and feet, and other signs to be spoken of in considering the subject of etiology. The disease is generally better in summer than in winter, and may even disappear in part or wholly during the hot weather. It is liable to relapse.

There are two distinct varieties of seborrhœa, which are designated respectively seborrhœa oleosa and seborrhœa sicca, according to the character of the secretion poured forth. Sometimes they are encountered together, usually upon different regions, as the scalp and face. Inasmuch, however, as the clinical appearances are different, I shall consider them separately.

SEBORRHŒA OLEOSA.—This variety appears in the form of an oily, greasy coating upon the skin, which gives it an unctuous look and feel. The secretion is decidedly oily in character, and may be in such quantity as to collect in minute drops upon the surface, when it will be seen to be a clear yellowish fluid, and fatty in its composition. It shows itself upon both the hairy and the non-hairy portions of the body. Its most common seat is the region of the face, and more particularly the nose and forehead. Here it is generally observed as a greasy layer, often containing more or less dust, looking at times as though the skin had been smeared with some dirty ointment. This product is given forth in varying quantities; at times it is formed slowly and occasions but slight inconvenience to the patient, who manages to remove it by repeated washings. In other cases, however, it is poured out in excess, and constitutes an annoying disorder. It is not often seen upon the hairy parts of the body. Upon the scalp it occurs more especially in those who are bald, giving the skin of the head the appearance of having been oiled. Marked examples of *seborrhœa oleosa* are not common.

SEBORRHŒA SICCA.—This is the variety usually encountered. It manifests itself upon both hairy and non-hairy regions. It consists in the formation of dry, more or less greasy masses of scales or crusts, of a grayish, yellowish, or brownish-yellow color, which have a tendency to adhere to the skin. A mixed form of the disease is also frequently met with, both varieties here and there or from time to time manifesting themselves.

Seborrhœa must be considered first as it occurs upon the hairy parts, more particularly the scalp.

SEBORRHŒA CAPITIS.—This is not only the commonest local form of the disease, but also the most important, on account of the disfiguring results which are likely to follow it. It is one of the most frequent sources of premature baldness. The affection is marked by the free formation of grayish or yellowish scales, which are ordinarily seen uniformly distributed over the scalp. More rarely they occur in the form of one or more variously sized patches. The scales may be either small, dry, and pulverulent, situated loosely upon the surface and detached from the hairs, or they may be in thin or thick crust-like masses, adhering to the

skin in the form of a coating. In these latter cases the hairs are often, as it were, pasted down to the scalp. In either instance the scales fall off, and collect about the shoulders of the patient. If the scalp be not cleansed and the accumulations removed from time to time, thick masses or cakes may form and completely envelop the region, preventing the hair from growing. The hair itself sooner or later becomes affected, is lustreless and dry, and soon commences to fall out. This is but the beginning, the process eventually terminating in more or less complete, permanent loss of hair, especially about the vertex. The follicles have been so long diseased by the morbid secretion of their glands that they have become structurally altered, and in many instances obliterated.

If the scales be detached, the scalp is usually seen to be of a dull grayish or bluish-gray color, a peculiarly dead, anæmic hue, which is characteristic. This appearance is almost always present in chronic sluggish cases, where the general health is obviously impaired. In other cases more or less hyperæmia exists. The disease may attack the whole of the scalp, uniformly, or only in places; the former course is commonly observed. The crown of the head is its favorite locality. In connection with seborrhœa of the scalp, mention may be made of the disease as it occurs upon the hairy parts of the face, as the moustache, whisker, and eyebrows, where it may occasion annoyance. The symptoms are similar to those of seborrhœa of the scalp, though usually they are less marked.

A condition of the scalp is sometimes met with where the nature of the process appears doubtful. It is questionable to what extent the sebaceous glands are primarily involved, and whether the affection should not be regarded rather as inflammatory in nature. It is characterized by a more or less hyperæmic or slightly inflamed state of the scalp, accompanied with the formation of fine, dry, epithelial scales, and sometimes burning or itching. It may run an acute or a chronic course, and is subject to exacerbations. It occurs in those whose hair is abundant as well as in those in whom the hair is scanty. This form of disease has received careful study from Pincus,* Piffard,† and Van Harlingen,‡ who

* Virchow's Archiv, Bd. xli., 1867, p. 322.

† Diseases of the Skin, New York, 1876, p. 192.

‡ Archives of Dermatology, April, 1878, p. 102.

regard it as distinct from seborrhœa, and designate it *PITYRIASIS SIMPLEX*.

SEBORRHŒA FACIÆ.—Upon this region it is mostly observed between the ages of fifteen and thirty. It occurs about the forehead, on the cheeks, and over the nose, involving any one of these parts alone, or attacking all of them at the same time, and tends to assume the oily variety, although the dry form is also seen frequently.* The skin may or may not be hyperæmic; more rarely it is inflammatory. At times it is reddish and irritable, and accompanied with burning or itching, especially in the dry variety; in the oily form these symptoms are seldom observed. Seborrhœa oleosa may exist here in all degrees, from a very slight to a marked disorder. It is seen as a shining, greasy film over the skin, generally showing itself about the forehead, cheeks, and nose.

Seborrhœa sicca appears as a more or less compact, thin or thick, greasy secretion, often in the form of a mask to the part. It adheres to the skin, and is bound down to it by the prolongations of sebaceous matter which come directly from the follicles. These sebaceous crusts are usually seen about the cheeks, nose, and forehead, and are disfiguring. In color they are generally yellowish, but they may be greenish, brownish, or even blackish. Particles of extraneous matter of one kind or another at times collect upon the surface, and may be incorporated into the crust. The process is usually active, the crusts being readily replaced in spite of frequent washings and other means employed for their removal. Itching and burning sensations may attend the disease in this locality; these symptoms, however, as a rule, are not constant, but are subject to exacerbations, keeping pace with the activity of the process. In other cases, of a less hyperæmic type, no symptoms of this kind are experienced.

SEBORRHŒA NASI.—This also calls for special attention. The nose is ordinarily reddish, shining, and oily. The redness is apt to give rise to more anxiety to the patient than the abnormal secretion. The nose is not increased in size, nor is it swollen or hot, but, on the contrary, is often cold. The openings of the follicles are noted to be more or less enlarged and patulous, a condition showing the absence of proper tone and vitality in the part.

* See Plate W in my Atlas of Skin Diseases.

Seborrhœa of the face, and in particular of the nose, is one of the sequelæ of variola, and often continues for a considerable time after the original disease.

SEBORRHŒA GENITALIUM.—On account of the great number and size of the glands about these regions, they are a frequent seat of seborrhœa. The condition is equally common in both sexes. In the male the glans penis and sulcus are the localities where it is ordinarily met with, forming a whitish, soft, cheesy mass, which collects about the parts. The same product is found in the female about the labia and clitoris. It may exist to a slight degree, scarcely constituting disease, or it may become copious and occasion inflammatory symptoms, which in the male, in cases of prolonged prepucæ, may result in balanitis. Decomposition of this sebaceous matter takes place rapidly, and is greatly favored by moisture and heat.

SEBORRHŒA CORPORIS.—It is necessary to speak of the affection as it is encountered here, because it assumes features which are different from those which are seen elsewhere. The back, between the scapulæ, and, in front, the clavicular and sternal regions, are the two localities where the disease generally appears. Both of these localities are often attacked at the same time.

Upon the back, patches are formed of varying size and shape; they may be the size of a finger-nail or as large as a silver dollar. Usually they are small. They may exist separately, but they more often coalesce, forming an irregularly shaped, ill-defined patch. They are pinkish or reddish in color, but, being partly covered with yellowish or grayish scales, often have a pale look. The scales are rarely in any quantity; they are usually loose, and are in many cases altogether wanting, having been detached and rubbed away by the friction of the clothing. The mouths of the follicles are observed to be open and enlarged. The patches sometimes merge into one another, and thus involve the shoulders and upper part of the back as one imperfectly developed patch, resembling in general appearance *marginate tinea circinata*. Aene papules and pustules, usually small, are occasionally seen here and there about the borders of the disease.

Upon the chest the patches generally assume a circular shape, and are made up of a pale reddish base, surmounted with pellicle-like epidermic scales, which are of a dingy grayish or yellowish

color, and are greasy or withered and dry. They usually have a well-defined outline; they may be either discrete, as is often the case, or they may have run together, forming one patch. There may be one or two or more present. Seborrhœa of this region may closely resemble *tinea circinata*. It is very slow in its course, and is subject to changes, being from time to time better and worse. It may disappear partially or completely during hot weather.

Etiology.—The causes which give rise to seborrhœa are numerous, but depend for the most part upon an impairment of the general health. Before referring to these, attention may be directed to the fact that a certain amount of sebaceous matter upon the skin is normal, and conducive to the preservation of this membrane. In the newly-born infant, for example, the smegma serves a valuable physiological function. It is only when the secretion is produced in excessive quantity or in abnormal form that the condition is to be regarded as disease.

The causes giving rise to the two varieties of the affection are the same, peculiarities of the individual determining whether the process will take on the form *oleosa* or *sicca*. Persons with light hair and complexion are more prone to the dry variety, while those with dark hair and skins commonly exhibit the oily form. It was Hebra who first pointed out that seborrhœa is in many instances dependent upon a chlorotic or anæmic state. This will in both sexes be found to be a common cause. Seborrhœic patients are, as a rule, thin and pale; have doughy complexions, often with a tendency to slight papular acne or comedones; and are poorly nourished or strumous. The various functions of the body are often deranged; especially is this the case in females, where the menses and the bowels are usually more or less irregular. Hence it is that seborrhœa is so frequent during the period of adolescence, when all the forces of the body are brought into action, and the functions belonging to adult life are regulating themselves. The disease occurs in both sexes, but is more often encountered in females. It may show itself at any time of life, although it is most frequently met with during early adult age. As I have already pointed out, all those conditions characterized by general debility and faulty nutrition, from whatever source, may serve as causes. Having thus referred to some of the known causes, it must also be stated that it may exist upon persons who appear to

be in otherwise excellent health, no appreciable origin for the disorder being recognizable. Such cases, however, are rarely obstinate and generally give way to local treatment.

Pathology.—Seborrhœa is a functional disorder of the sebaceous glands, consisting in an increased and usually altered flow of the secretion, together with a variable amount of epithelial scales derived from the glands and their ducts. The sebum given out may be either oily or firm in its consistence, this difference giving rise to the varieties of the affection. In health it is known that the sebaceous glands discharge a variable amount of sebum in different localities; some parts of the skin, as the scalp, needing an abundant supply, other portions requiring but a small amount. Seborrhœa is most common where the glands are normally most active, as upon the scalp, nose, and cheeks. It is a functional derangement of the glands, no alteration, as a rule, taking place in their structure. At the same time, if the process be allowed to run on indefinitely, certain organic changes occur, as atrophy of the glands, follicles, and adjacent structures. This is not infrequently observed upon the scalp. The product of seborrhœa, examined with the microscope, is found to consist of an amorphous, fatty, slightly granular mass, together with epithelial cells, coming from the lining walls of the glands and their ducts. The sebum and the scales vary as to proportion. In some cases the epithelial cells are greatly in excess of the sebaceous matter, the product thrown off being mainly epithelium more or less altered in character.

Diagnosis.—Seborrhœa is a disease whose features vary considerably with the intensity of the process. It also presents different appearances upon the various regions of the body. There are several affections which at times resemble it closely. Upon the scalp it may readily be mistaken for dry eczema. Seborrhœa, when present, usually occupies the greater portion of the scalp more or less uniformly; eczema is apt to be localized, appearing in distinct patches. The scales are generally abundant in seborrhœa and form rapidly; in eczema they are ordinarily scanty. The skin of a patch of seborrhœa is usually pale in color; that of eczema is always more reddish, and is infiltrated more or less and thickened. Seborrhœa is always a dry disease; in eczema a history of moisture at some period in the course of the affection

is very frequently obtainable. The itching of seborrhœa is seldom so intense as that of eczema. About the face it may also resemble eczema, especially the erythematous variety. The thick sebaceous crusts which occasionally occur upon the cheeks at times look not unlike those of vesicular eczema; but the history of the disease will aid in establishing the diagnosis.

Seborrhœa bears even a closer resemblance to psoriasis, whether occurring on the scalp or on the body. In seborrhœa the disease is usually uniformly diffused over the scalp; in psoriasis the patches are, as a rule, irregularly dispersed, with healthy skin between them; their outlines, moreover, are generally sharply defined. In seborrhœa the scales are minute or caked, grayish or yellowish in color, and have a greasy feel; in psoriasis they are dryer, more abundant, much larger, thicker, and whiter. In seborrhœa the scalp is only exceptionally inflamed; frequently it is pale, anæmic, and leaden in color. In psoriasis the scalp beneath the scales is always reddish and inflamed. This latter point, it appears to me, is one of great value as an aid to diagnosis. The histories, moreover, of the two diseases are different.

Seborrhœa of the scalp can scarcely be confounded with tinea tonsurans, but upon the chest it not infrequently looks like tinea circinata. Its history, the slowness of its course, and the greasy feel and appearance of the scales, together with their microscopic examination, will always serve to distinguish it from this disease.

The striking similarity between seborrhœa and the milder forms of lupus erythematosus renders the diagnosis now and then difficult. It must here be remembered that lupus erythematosus not infrequently makes its first appearance as a congestive seborrhœa. When fully developed, however, the distinctive features of lupus are sufficiently marked not to permit of error. Seborrhœa seldom possesses the line of demarcation seen in lupus erythematosus; nor is it usually attended with such inflammatory signs. Seborrhœa, moreover, is never accompanied by infiltration and thickening, both constant symptoms of lupus. The patches of seborrhœa are pinkish or reddish, but seldom of a deep tint; in lupus they may also be pinkish, but more often are dark red or violaceous, and covered with tenacious scales. Pathologically, seborrhœa is a functional disorder; lupus is a new growth. Seborrhœa, finally, differs from lupus in that it is not followed by cicatricial tissue.

Treatment.—Local and constitutional treatment are both to be considered. They may be employed separately or together. Internal remedies are to be directed in those cases where there is obvious functional disturbance of some of the organs of the body, or where there is need for constitutional treatment. The history of the patient, and of the course of the disease, should always be carefully inquired into. The causes upon which the affection depends are often so obscure as to call for attentive study. The indications will be those symptoms already referred to in speaking of the etiology of the disease.

It is of importance that the patient be surrounded by proper hygienic influences. Fresh air and exercise are valuable aids in the treatment of a certain class of seborrhœas in young persons, especially women. The food should be as nourishing as possible. Cod-liver oil in full doses should be prescribed, and taken for a considerable time: it will be found of service in many cases. Iron is also of value, as in the following formula:

R Tinct. Ferri Chloridi, $\text{f}\overline{\text{3}}\text{i}$;
Acidi Phosphorici dil., $\text{f}\overline{\text{3}}\text{i}$;
Syrupi Limonis, $\text{f}\overline{\text{3}}\text{ii}$.

M.—Sig. Half a teaspoonful three times daily with a wine-glassful of water. To be taken through a glass tube.

Other ferruginous preparations may be ordered as age and other conditions may require. Not infrequently arsenic in small doses acts beneficially. It may also be advantageously prescribed with wine of iron:

R Liq. Potassii Arsenitis, $\text{f}\overline{\text{3}}\text{i}$;
Vini Ferri, $\text{f}\overline{\text{3}}\text{iv}$.

M.—Sig. One teaspoonful three times daily directly after meals.

Sulphur and its compounds, especially the sulphides, remain to be mentioned, and are valuable remedies. The doses should be small, and the treatment continued for weeks or months. The sulphide of calcium may be given in doses of one-tenth or one-fifth of a grain three or four times daily.

The local treatment is also of the greatest importance. It must vary somewhat as one region or another is the seat of disease.

Seborrhœa capitis calls for special directions. If there be an accumulation of sebum and scales, they should be removed at once and the surface thoroughly cleansed, that a view of the skin and follicles may be obtained. At times the mass of sebaceous material is so thick and inspissated that ordinary washing with soap and water is not sufficient to cleanse the head. When this is the case, one of the bland oils should be first rubbed in and allowed to remain for a while. Either olive oil or almond oil is to be preferred for this purpose. The patient is directed to pour a quantity of the oil upon the head, and to have the scales saturated with it. Enough must be applied to soften and loosen the mass. The operation is best performed at night-time. A close-fitting cap, made of flannel, should be put over the head, and a bandage worn, in order to keep the oil from soaking through. In the morning the cap is to be removed and the scalp thoroughly washed with warm water and soap. Ordinary hard soap is usually not strong enough. Soft soap alone with water or dissolved in alcohol, according to the following formula, will be found valuable :

R Saponis Viridis, ℥viii ;

Aleoholis, f℥iv.

Solve et filtra.*

Sig. To be used as a soap-wash or shampoo.

Equal parts of soap and glycerine will also be found useful for the same purpose. A tablespoonful may be poured upon the head, together with a small quantity of water, which with friction will produce a copious lather. This is to be rubbed into the scalp, and afterwards washed out with warm water. The hair should now be dried by means of soft towels; if long and thick, it may be dried with the heat of a fire. Concerning the cutting of the hair to facilitate the treatment, I would remark that the process is never necessary. The applications may be made with as much success when the hair is long as when it has been cut. The washing and drying operation performed, it is now necessary to apply some oily or fatty substance. If this be not done, both the

* This preparation, and the mode of its employment, were introduced to the profession by Hebra. It may be made in various proportions, and perfumed to please the individual. Cologne water may be used in the place of alcohol.

hair and the scalp will become dry and harsh. The kind of oil or pomade to be used will depend in a measure upon the condition of the scalp. If irritated, one of the simple oils, as almond oil, or vaseline, the latter preferably benzoated in the strength of a few grains to the ounce, should be applied. Glycerine and water, one part to four or eight, also constitutes an excellent mild oily preparation. Glycerine and alcohol, one part to two or four, will sometimes prove grateful, especially in those cases where the scalp is dry, hyperæmic, and heated. In the majority of instances, however, stimulating preparations will be found of greatest benefit. Carbolic acid often acts favorably in combination with an oil and alcohol, as follows :

R Ol. Ricini, fʒii;
 Acidi Carbolicæ, ℥xxx;
 Alcoholis, fʒiiss;
 Ol. Amygdal. Amar., ℥x.
 M.—Sig. To be applied after washing.

Tincture of cantharides, tincture of nux vomica, tincture of capsicum, chloral, corrosive sublimate, and other similar substances, may in like manner be employed where direct stimulation is indicated. The following formula may also be recommended :

R Tinct. Cantharidis, fʒiii;
 Tinct. Capsici, fʒiii;
 Ol. Ricini, fʒii;
 Alcoholis, fʒii;
 Spts. Rosmarini, fʒi.

Chloral may be used in the strength of from twenty to forty grains to the ounce of water with the addition of a small quantity of glycerine. Anderson gives the following formula for a wash containing corrosive sublimate :

R Hydrargyri Chlor. Corros., gr. xii;
 Glycerinæ, fʒiv;
 Alcoholis, fʒv;
 Spts. Rosmarini, fʒiv.
 M.—Sig. Apply twice daily.

Ointments are also used with good effect. They should be used in small quantity, and well rubbed into the scalp. Precipitated

sulphur, in the strength of from half a draehm to two drachms to the ounce, must be first mentioned. It is our most valuable remedy. The red oxide of mercury and ammoniated mercury are also useful, in the strength of from five to fifteen grains to the ounce, and may be prescribed with one of the petroleum ointments, as follows :

℞ Hydrargyri Oxidi Rubri, gr. x ;

Ungt. Petrolei, ℥i ;

Bals. Peruvianæ, gr. v.

M. Ft. ungt.

Sig. A small quantity to be applied once or twice daily.

Ointment of the nitrate of mercury two drachms, to vaseline six drachms ; and tannic acid thirty grains to the ounce of vaseline, may both be mentioned as useful formulæ. The preparations of tar are also very useful. One draehm of liquid tar to the ounce of ointment will often be found valuable. The oil of cade may likewise be employed.

Having enumerated some of the preparations that may be employed, further directions as to the frequency of these applications remain to be given. According to the activity of the process, the quantity of the scales, itching, and the general condition of the head, the cleansing is to be repeated every day, every other day, or as occasion may seem to require. The oil or ointment should be used after each washing. At times, where the scales are not plentiful, it is expedient to apply the oil or ointment occasionally without previous cleansing. The treatment should be persisted in for weeks or months, until in fact improvement takes place.

The local treatment of the face, body, and non-hairy regions is somewhat similar to that just described for the scalp. The masses of scales or the sebaceous crust are to be removed by frequent washings or warm baths, together with soaps of suitable alkalinity. After being well cleansed, sulphur ointments and lotions, alcoholic lotions, mercurial ointments, bland oils or ointments, are to be used as may appear indicated. The kind of application to be preferred will depend upon the condition of the part, upon the variety of the disease, upon the hyperæmia present, and finally, after trial, upon those remedies which appear to act most beneficially.

Prognosis.—This will depend somewhat upon the general condition of the patient. As a rule, the affection is obstinate, yield-

ing only after treatment has been continued for some time; months are frequently found to be necessary to alter the abnormal secretion. On the other hand, some cases yield very readily. The most serious form is usually observed on the scalp, where it has lasted for some time and the hair has already begun to fall out; in these cases the prognosis is not favorable for a speedy termination, or for the restoration of the hair. When baldness has already occurred, a future growth of hair is not to be looked for, although much may be accomplished towards restoring to a state of health those follicles which have not been seriously involved. In infants the affection seldom occasions difficulty, being usually amenable to simple remedies.

COMEDO.

COMEDO IS A DISORDER OF THE SEBACEOUS GLANDS CHARACTERIZED BY YELLOWISH OR WHITISH PIN-POINT AND PIN-HEAD SIZED ELEVATIONS CONTAINING IN THEIR CENTRE BLACKISH POINTS.

Symptoms.—It is observed for the most part about the face, neck, chest, and back. Each single elevation or papule is designated a comedo, and they are usually spoken of in the plural as comedones. They may be very numerous or few; usually, where there is a tendency to their formation, they exist in numbers, giving a brownish or blackish, speckled or punctate appearance to the part. Their common situation is about the forehead, cheeks, and chin. As in the case of acne, they are usually irregularly distributed. In size they are small, varying from a pin-point to a pin-head. At times they form in great numbers upon the face, and are then disfiguring, giving the individual the appearance of having had minute grains of powder implanted in the skin. The skin has a dirty, greasy, unwashed look. The condition is not attended with any sign of inflammation, unless complicated with acne, and gives rise to no subjective symptoms. It is, however, very frequently associated with acne, to which disease it is intimately allied. It occurs principally in young people, perhaps most often at the age of twenty or thereabouts, but it is also seen in older persons. The lesions come and go from time to time, although their course is naturally sluggish and chronic. Their continuance, however, depends upon the nature of the cause

and other circumstances. Without interference they may last for years. Occasionally, notwithstanding the most energetic treatment, they prove rebellious.

Etiology.—It is frequently observed to occur in those whose skins are improperly cared for. The true source of the disease is, I think, to be found, certainly in many instances, in disorders of the important functions of the body, as we so often observe in the case of aene. Persons suffering from comedones are generally noticed to have a thick, muddy-looking skin, plainly showing a want of activity not only in the glandular structures but also throughout the whole integument. More or less constipation or irregularity of the bowels, with dyspepsia, is frequently present; while patients will often be observed to exhibit a state of hebetude denoting a general condition of sluggishness with reference to the various functions of the body. In young women chlorosis and menstrual difficulties are likely to be present.

Pathology.—The affection has its seat in the sebaceous glands and ducts. It consists of an accumulation of sebum and epithelial cells in the glands and follicles, dilating the ducts to such an extent as to produce the point or elevation upon the surface. According to Unna,* the dark points so characteristic of the disease are due to pigment, existing partly in the form of free granules and partly diffused in the horny cells at the upper part of the comedo. The pigment is black, blue, or brown. The process is an inactive one, and occasions little or no disturbance in the surrounding tissues. The obstruction may relieve itself, or it may continue, distending the gland until a papule is formed. The comedo is readily removed by pressure exerted upon its walls, when the mass is seen to consist of sebaceous matter with epithelial cells, dirt, or other foreign particles. The cells are filled with oil globules and exhibit signs of fatty degeneration. Small hairs are frequently found in these masses, and also at times the microscopic *demodex folliculorum*. This little mite, however, is not to be viewed as in any way the cause of the disorder. It is altogether inoffensive in character, and is found to exist in healthy follicles as often as in comedones.

Diagnosis.—No difficulty can arise upon this point. The affection is so commonly observed upon the face, that its features are

* Virchow's Archiv, Bd. lxxxii.

well known to all. As stated, it is frequently encountered in connection with aene; the two processes, however, may be distinguished by the absence of inflammatory symptoms in comedo. Milium is likewise a disorder closely allied both in nature and in appearance to comedo. They differ in that milium contains no open duct and is consequently without the characteristic black point of comedo. Milium is seated just beneath the epidermis, as a circumscribed whitish body, and cannot be forced out of the skin without rupturing or first incising its covering.

Treatment.—Local treatment suffices in many cases to relieve the condition. Frequent hot baths, with soft soap or equal parts of soap and alcohol, or soft soap and glycerine, likewise equal parts, followed by friction, often alone serve to stimulate the glands to normal activity. In addition to this, each comedo is to be treated separately, by expressing the contents of the follicle, which may be accomplished by means of a watch-key of suitable bore placed directly over the black point and pressed upon. The same result may be obtained by squeezing the comedo between the thumb nails. A certain number of the lesions should be treated in this manner each day, until all the follicles have been emptied; when they again become plugged, the same process is to be repeated, and from time to time, until healthy action is assumed. Another mechanical mode of treating the lesions consists in the use of the dermal curette, or scraper. Frictions with fine sand may also be resorted to, as recommended by Ellinger. Stimulating lotions and ointments, especially the sulphur compounds, are of the most service. The following may be used with good result:

R Sulphuris Præcipitati, ℥ii;
 Glycerinæ, fʒi;
 Adipis, ʒvi.
 M. Ft. ungt.
 Sig. To be well rubbed in at night.

Alcoholic lotions, with sulphur, as, for example, those referred to in the treatment of aene, may also be employed with benefit. Equal parts of sulphur, glycerine, alcohol, carbonate of potash, and ether, will be found a useful application, used every second or third night where the skin is irritable. The various remedies useful in aene may also be resorted to in obstinate cases. Where

the skin becomes inflamed or harsh under the use of stimulating remedies, weak alkaline ointments, as half a drachm of borax or of bicarbonate of soda, with ten or fifteen minims of glycerine, to the ounce, may be used. Together with the local measures, treatment for the improvement of the general health should at the same time be instituted, as the case may demand. Derangement of any of the functions of the body should be corrected; proper diet and hygiene should be directed, and strict attention given to the ordinary rules for promoting health. The preparations of iron and arsenic are of benefit in many cases, especially in chlorotic young women. Cod-liver oil I have also found to be of service.

Prognosis.—As a rule, no difficulty is encountered in the removal of comedones, a few months usually sufficing for their cure. Occasionally, however, they are remarkably obstinate, new ones returning from time to time in the same glands. The patient should always be encouraged, for, with a well-directed treatment, a favorable result must sooner or later occur.

MILIUM.

Syn., Grutum; Tubercula Miliaria; Follicular Elevations; Tubercula Sebacea; Acne Albida; Pearly Tubercles; Strophulus Albidus.

MILIUM CONSISTS IN THE FORMATION OF SMALL, ROUNDISH, WHITISH, SEBACEOUS, NON-INFLAMMATORY ELEVATIONS, SITUATED IN THE SKIN BENEATH THE EPIDERMIS.

Symptoms.—Milia have their seat for the most part upon the face, especially on the forehead and about the eyelids; they may, however, occur on other parts of the body. They vary as to size from a pin-point to a small pea; their ordinary size is that of a millet-seed,—hence the name. They may occur singly or in great numbers. As a rule, a half-dozen or more are met with scattered over the upper part of the face. In color they are whitish, pearl-colored, or yellowish, and often have a translucent look, as though they contained fluid. In form they are rounded or acuminated, and may be felt as more or less firm or hard bodies embedded superficially in the skin. They form very gradually and slowly, and when fully developed are not apt to undergo any change, but may remain in the same state for years. No inconvenience, beyond disfigurement, is occasioned by their presence. They are

sometimes met with in connection with acne and comedo; in other cases they constitute the sole disorder. They are met with more commonly upon women than upon men, and usually first show themselves at middle age.

In connection with milium, the so-called stones of the skin, or CUTANEOUS CALCULI, may be referred to. They are usually milia or sebaceous concretions which have undergone metamorphosis into hard, calcareous, stone-like masses; they are met with only rarely. Dr. E. F. Foster,* of Boston, has reported a case, where the formation, situated on the side of the face of a woman nineteen years of age, gave rise to a small, oval, hard tumor. After excision it had the appearance of a small urinary calculus. It was found to be densely calcified and to consist mainly of phosphate of lime, together with a small amount of carbonate of lime, epithelial debris, and fatty matter.

Etiology.—The causes of milium must be viewed as being similar to those which give rise to comedones and cysts of the sebaceous glands. In some cases, however, no cause can be assigned for its appearance.

Pathology.—The affection has its seat in the sebaceous glands. It consists in an accumulation of sebum within the gland, which, owing to obliteration of the duct from some cause or other, is unable to escape. No sign of aperture is to be found. The contents cannot be squeezed out, for the formation is completely enclosed. If carefully examined, it will be seen that the lesion is situated just beneath the epidermis which constitutes its external covering. Neumann and others have found upon section that the covering proper is either the wall of the hair-follicle or that of the gland itself, and that the larger milia contain connective-tissue septa running through them. The mass is made up of sebaceous matter closely packed together and tending to become inspissated and calcareous.

Diagnosis.—Although milium and comedo are similar in appearance, they differ in one important anatomical particular. In milium there exists a distended but enclosed or encysted gland without opening; in comedo the duct of the gland is always patent upon the surface. Milium usually exists alone, the rest of

* Boston Med. and Surg. Jour., Jan. 30, 1879.

the skin being in good order; comedo is commonly associated with general derangement of the skin. The blackish point of comedo is another conspicuous feature. The disease can scarcely be confounded with xanthoma, a disease which usually has its seat about the eyelids, but which is of a very different nature.

Treatment.—The treatment consists in opening the little tumors by means of a knife and removing the contents. Piffard advises the application of a minute drop of tincture of iodine after incision, thereby setting up inflammation with the view of destroying the gland. Hardaway recommends electrolysis, with the needle and battery, as in the operation for the permanent removal of hair.

SEBACEOUS CYST.

Syn., Encysted Tumor; Follicular Tumor; Sebaceous Tumor; Atheroma; Steatoma; Wen.

SEBACEOUS CYST APPEARS AS A VARIOUSLY-SIZED, FIRM OR SOFT, ROUNDISH, MORE OR LESS PROMINENT TUMOR HAVING ITS SEAT IN THE SKIN OR SUBCUTANEOUS CONNECTIVE TISSUE.

Symptoms.—The skin covering sebaceous cysts is normal in color, or whitish, owing to extreme distention. The tumors may occur singly or in great numbers. In size they vary from a pea to a walnut and larger; in shape they are rounded, and either flattened or semiglobular. In consistence they are either hard, or, as is more commonly the case, soft and doughy. They are, as a rule, freely movable, and are unattended by pain. The scalp, face, back, and scrotum are the favorite localities for the development of these formations. Their course is slow; not infrequently they exist for years without giving rise to inconvenience. At times, when excessively distended, they break down and ulcerate.

Two kinds of tumors may be distinguished: one in which the duct is open, the other in which it is closed. Where the duct remains open, the tumor is usually flat in form, tending to extend itself laterally rather than above the level of the skin; this variety is most frequently encountered on the neck and back. Where, on the other hand, the duct has become obliterated, constituting the true encysted tumor, the formation assumes a semiglobular or even a globular form, projecting itself prominently beyond the

level of the skin; it is common upon the scalp, and occurring here is usually devoid of hair.

Pathology.—The contents of sebaceous tumors vary. The mass is ordinarily firmly eneysted, and may be either soft and cheesy or hard and friable in consistence. It may be yellowish or whitish in color. It is often fetid in odor. Occasionally the contents are fluid in character. The mass is composed of sebum, epidermic cells, crystals of cholesterine, and at times hairs. In structure these tumors are to be regarded as enormously distended sebaceous glands and ducts, whose walls have become so greatly thickened and hypertrophied by the continual pressure exerted upon them as to form a thick, tough sac, or cyst.

Diagnosis.—No difficulty exists in the diagnosis; they may, however, be confounded with fatty tumors, and with the tumors of epithelial molluscum.

Treatment.—The treatment is excision. The cyst should always be carefully and thoroughly dissected out, without which precaution the disease is likely to be reproduced. Injection with certain irritating fluids, as, for example, tincture of iodine, may also be practised with success.

HYPERIDROSIS.

Syn., Idrosis; Hydrosis; Polydrosis; Sudatoria; Ephidrosis; Excessive Sweating.

HYPERIDROSIS IS A FUNCTIONAL DISORDER OF THE SWEAT GLANDS CONSISTING IN AN INCREASED FLOW OF SWEAT.

Symptoms.—It may vary greatly as to quantity, from slightly in excess of health to the pouring forth of large amounts. The condition may exist as an acute or as a chronic one. It may be either universal, involving the whole body, or local, attacking certain regions, as, for example, the palms and soles. The temperature in some cases is markedly increased, while in others it is lowered.

Universal or general sweating is observed in the course of a number of diseases, as, for instance, in pneumonia, tuberculosis, rheumatism, and various febrile maladies. It also occurs in those who are otherwise in health, especially when exposed to the influence of a high temperature. In a majority of these cases, however, it is scarcely to be considered in the light of a disease.

Local hyperidrosis is always a disagreeable and annoying dis-

order. It may occur upon any portion of the body, but is more commonly encountered about the palms, soles, axillæ, and genitalia. It may or may not be symmetrical. It may be constant, or, as is more usually the case, intermittent or paroxysmal. Sometimes it is periodical, as in the case of Yandell,* in which the flow recurred daily at the same hour. Numerous cases of unilateral sweating are on record, the affection occupying one side of the body, one side of the forehead, a cheek, an arm, a leg, and other single regions. Sometimes small areas, occasionally in the median line, are the seat of the disorder. The subject of the anomalies of perspiration has recently received attention from Dr. J. H. Pooley,† who has collected the records of many curious cases. Wilson‡ relates the singular case of one who perspired freely on one side of his face and on the opposite side of his chest at the same time, while the rest of the body remained dry. Interesting instances of localized sweating are also reported by Dr. J. J. Caldwell,§ in an article entitled *Neuroses of the Pneumogastric and Sympathetic Nerves*. A case is mentioned of a child who, when nursing at the breast, sweated at the knees. Sometimes sweating follows an irritation reflexly. Brown-Séquard in his own person finds that when he excites the nerves of taste, as by chocolate, in less than five minutes a very abundant secretion of sweat ensues on the lips, nose, and forehead.||

The palms, soles, and genitalia are the parts usually attacked. The sweat may be moderately copious or excessive; at times the quantity poured out is so profuse as to keep the parts in a state of maceration. Upon the palms and soles the secretion is continually oozing out in drops, frequently in such quantity as to be dripping wet. From the palms it may be so profuse that the fluid will accumulate in the hollow of the hand until it runs over the edge. The skin cannot be kept dry, becoming wet again in a few minutes after having been dried. Upon wiping off the perspiration it is observed to be of a whitish or yellowish color, and to have a soggy appearance. It is ordinarily seen to come from the whole surface.

* Trans. Iowa State Med. Soc., 1880. (Article by Dr. Lothrop.)

† Ohio Med. Recorder, 1880.

‡ Lectures on Dermatology, London, 1878.

§ Virginia Med. Monthly, Oct. 1878.

|| Jour. de la Physiologie, t. ii. p. 450.

The flow is usually a steady one, although it is influenced by the general condition, the state of the nervous system, and the surrounding temperature. Upon the soles the affection is even more distressing than on the palms, for the socks and shoes become saturated with moisture. The maceration of the epidermis, together with the secretion about the toes, sometimes gives rise to a disagreeable odor, which in spite of frequent washing is difficult to remove. The epidermis becomes soaked and macerated, peels off, and leaves the tender skin exposed. The pain attending walking when in this condition is often severe, and patients at times are obliged to remain off their feet. The genital organs are also frequently the seat of the disease, particularly in men. The scrotum and perineum are commonly attacked, the symptoms being similar to those just mentioned in connection with the palms and soles.

The disorder may continue for a short time only or it may last for years; sometimes it is extremely obstinate. More or less hyperæmia and erythema-intertrigo may accompany it, especially when it occurs about surfaces that naturally come in contact, as the genital organs, nates, fingers, and toes. In certain cases it is almost invariably aggravated by directing the attention of the patient to the subject or by examining the part, showing the disease to be largely under the control of the nervous system. Sometimes it is accompanied by disagreeable sensations, as pricking, tingling, or a sense of fulness of the skin.

Etiology.—The causes are in many instances not to be determined. It affects the cleanly as well as the uncleanly, and females as well as males. In its morbidly exaggerated form Wilson is of the opinion that it is commoner in the male than in the female sex. Occasionally the tendency is inherited. The same observer cites a family of seven children, three males and four females, in which all the males suffered from the disease, whilst the females escaped. It is, moreover, met with in the young as well as in the old, and in the healthy as well as in the feeble. There can be no doubt, however, that disturbance of the nervous system, debility, and faulty innervation play an important part in its causation, this origin being frequently recognized in clinical experience. Malaria may also be cited as a cause. Functional or organic disease of the internal organs, as the heart and lungs, may give

rise to some forms of the disease. Excessive and sometimes otherwise abnormal perspiration may also be caused by injuries to the nerves, as has been shown by Pooley.* The complaint is aggravated by high temperature, and is consequently generally worse in summer than in winter. It may be increased by physical or mental excitement or stimulus.

Pathology.—The affection is a purely functional one, consisting in an abnormal secretion of the sudoriparous glands, over which the vaso-motor system doubtless has control. The secretion usually differs chemically in no way from normal sweat. Sometimes the amount of sweat discharged in a given time is very large.

Diagnosis.—This is never attended with any difficulty; at the same time it is of importance to distinguish hyperidrosis from other disorders of the sudoriparous glands which are accompanied by increased secretion and inflammation, as, for instance, prickly heat. Oily seborrhœa can scarcely be mistaken for hyperidrosis.

Treatment.—If there be debility, a general tonic treatment should be ordered. Iron, strychnine, quinine, and the mineral acids, especially aromatic sulphuric acid, in ten or twenty drop doses twice daily, will be found useful. The condition of the nervous system is to be carefully investigated. Belladonna and atropia are among our most valuable remedies. Atropia may also be used hypodermically in doses of from one-hundredth to one-fiftieth of a grain. Pilocarpin has been found of service, according to Ringer and Bury.† Ergot has been employed with benefit. Faradization has likewise been used with success in some cases.

Local treatment is of great value in all forms of the disease. Water in the form of a bath, unless medicated, is, as a rule, to be employed as seldom as possible. Occasionally, however, hot water, as hot as it can be borne, is of service. The parts should be cleansed and immediately dried. Various dusting powders, as starch, lycopodium, magnesia, oxide of zinc, oleate of zinc, and talc, or the same medicated, as with salicylic acid, from five grains to half a drachm to the ounce, may be used. A formula much employed in the German army consists of salicylic acid, three parts; talc, seven parts; and starch, ninety parts. They should

* Ohio Med. Recorder, Sept. 1880.

† Practitioner, Dec. 1876, p. 401.

always be removed as fast as they become moist and caked. Lotions containing alcohol and astringents will be found serviceable. Tannic acid, two or three drachms to the pint, may be referred to. Various other astringents, such as sulphate of zinc, one or two drachms to the pint of water, and alum, of like strength, may be employed; also salt baths. Acetate of lead may also be mentioned, in the strength of a drachm to the pint, with the addition of an ounce each of acetic acid and alcohol. Tincture of belladonna, diluted or of full strength, is perhaps our most valuable remedy. It often succeeds when others fail. Care should be observed in its use, with a view to its toxic effects. Dilute ammonia water, and acetic acid, diluted, have been found serviceable. Weak solutions of chloral, permanganate of potash, and salicylic acid have also been employed with success. In hyperidrosis of the palms and soles the following ointment, esteemed by Wilson, may be prescribed, the parts being first well washed with carbolic acid or juniper-tar soap.

R Ungt. Picis Liquidæ,
Ungt. Sulphuris, āā, ℥i.
M. Ft. ungt.

Sig. To be spread upon cloths and applied with a bandage.

For obstinate cases involving the palms or soles, however, the treatment about to be described will be found of greatest service.* To insure success, it is necessary that its various steps be closely followed. The parts are to be cleansed with water and soap, and the following ointment applied on pieces of cloth cut to the size of the region. Lint smeared with the ointment is also to be placed between the toes or fingers, so that every portion of the skin may be covered with a layer of the ointment.

R Emplast. Diachyli, ℥iv;
Olei Olivæ, f℥iv.
M. Ft. ungt.†
Sig. To be used on cloths.

The cloths are to be changed every twelve hours, when the

* This method of treatment was first introduced to the profession by Hebra.

† The plaster to be melted, and the oil added and stirred until a homogeneous mass results.

parts are not to be washed, but rubbed dry with lint and a starch dusting powder, after which new dressings are again to be applied in the same manner. This proceeding is to be continued for from one to two weeks. When the disease is upon the soles, the patient may walk about in loose shoes. At the expiration of eight or ten days the parts are to be rubbed with the dusting powder and the dressings discontinued. The powder should be used for several weeks longer. Usually the sweating tends to disappear after two or three weeks from the beginning of the treatment. A repetition of the course, in severe cases, is at times necessary before bringing about a complete cure. For slight hyperidrosis some of the stimulating toilet soaps, containing sulphur, juniper-tar, or carbolic acid, may be employed.

Prognosis.—This should be guarded. Many cases are easily relieved, while others are extremely intractable. The state of the health, and the duration and locality of the disease, as well as its extent, are all to be considered. Lastly, the ability of the patient to follow the treatment must influence the result.

ANIDROSIS.

ANIDROSIS IS A FUNCTIONAL DISORDER OF THE SWEAT GLANDS CONSISTING IN A DIMINISHED AND INSUFFICIENT SECRETION OF SWEAT.

Symptoms.—It is the opposite of hyperidrosis. It occurs in the course of certain chronic diseases of the skin, and is particularly noticeable in ichthyosis; it may also be observed in patches of eczema, psoriasis, lepra, and elephantiasis Arabum. It may exist as the result of a congenital deficiency of the sweat glandular apparatus, in which case the person perspires very slightly, and perhaps sensibly only under a high temperature. Local anidrosis is occasionally noted as a result of injuries to nerves. Fear and passion may also sometimes cause a temporary arrest of the secretion.

There are other cases in which the individual ceases at times to sweat. In these instances the health is more or less impaired, and serious symptoms may arise, especially during the warm weather. It is at this season that such cases are apt to come under observation. Occurring as an independent disorder it is rare. I recall the case of a man—a blacksmith—who suddenly during the hot weather ceased sweating. He was, when I saw him, several

weeks after the difficulty first manifested itself, unable to pursue his occupation, and complained greatly of indisposition, headache, and other symptoms of distress.

Treatment.—Every means should be instituted to promote the activity of the skin and to restore the function of the glands. Hot baths and steam baths are to be recommended. Cold baths with frictions may also be of service. Exercise is to be freely indulged in, and the general health looked after in every way. Sudorific drugs, as jaborandi and its alkaloid pilocarpin, may also be resorted to.

BROMIDROSIS.

Syn., Osmidrosis; Odorous Sweat; Stinking Sweat.

BROMIDROSIS IS A FUNCTIONAL DISORDER OF THE SWEAT GLANDS CHARACTERIZED BY MORE OR LESS SWEATING AND AN OFFENSIVE ODOR.

Symptoms.—The secretion may be normal or abnormal as regards quantity. It may occur either as a universal or as a local disorder. When universal, the patient is noted to exhale a peculiar, heavy, disgusting odor from the whole surface, which is intensified with increased perspiration. It may have a distinctive character, which may be likened, for example, to the odor of a goat (odor hircinus), of urine (odor urinosus), onions, assafœtida, sulphur, or musk, or it may be simply strong-smelling. Peculiar odors are also noted in connection with various systemic diseases, as the exanthemata, especially smallpox; also with some fevers, as, for example, typhus and relapsing fever. Certain foods are said to give rise to peculiar odors, as, for instance, a long-continued diet of fish. The odor of some drugs is also to be detected in the exhalations from the skin, as, for example, sulphur, assafœtida, musk, iodine, etc. Occasionally a peculiar mousy or musky odor emanates from the skin, especially from the axillæ, without there being sensible perspiration. Some persons are always so affected. Wilson* relates the case of a man who suffered from a disagreeable odor arising from the skin, which, however, was not perceptible to those about him. It was not amenable to treatment, but disappeared after an attack of pneumonia.†

* Lectures on Dermatology, London, 1878.

† Dr. W. A. Hammond (The Odor of the Human Body as developed by Certain Affections of the Nervous System, New York Med. Record, vol. xii.,

The local forms are more frequently encountered. Certain regions of the body, as the axillæ, genitalia, perineum, and feet, are the usual seats of the disorder. The intensity of the odor varies, being at times merely heavy, and in other instances so penetrating and offensive as to banish the individual from society. It is usually worse in damp or moist weather. Bromidrosis of the feet (*bromidrosis pedum*) is the most common local form, and constitutes a disgusting disease. The disease generally begins in the form of a small irregularly-shaped patch on the back part of the sole, with a well-defined pinkish margin. It is generally symmetrical. The heels become tender, and excoriated or blistered, and walking painful. On rising, the soles are often bright red in color and shining, becoming through the day whitish and sodden. It is encountered in both sexes, and most frequently between the ages of twenty and thirty. The emanations here are intensified by the perspiratory secretion acting upon the normal sebaceous matter, producing a smell particularly foul. According to Hebra, and more recently Thin,* the smell is not in the feet but in the coverings,—in the socks and soles of the shoes. The latter observer states that the fluid in which the sole of the sock is soaked teems with bacteria (*Bacterium fœtidum*), which acts as an irritant to the skin. Owing to the warmth and moisture which always exist about these parts, the scent is exceedingly persistent. The disease is similar to hyperidrosis, the main difference being in the quality of the secretion. The causes are generally obscure, though in the majority of instances connected with the nervous system; emotional disturbance, also sexual excitement, are known to be causes in certain cases.

1877, p. 460) records several interesting cases of odorous sweat; one of a young married lady of hysterical disposition, from whom during a paroxysm an agreeable odor similar to that of violets, and perceptible at a distance of several feet, with marked hyperidrosis, was exhaled only from the left lateral half of the anterior wall of the chest. The hyperidrosis as well as the odor was relieved by the internal use of salicylate of sodium in five-grain doses. In another case the emission of a pineapple odor coincided with an attack of chorea; in a third case a pineapple odor was emitted from the skin of the head, neck, and chest of a woman whenever she was angry. A fourth case was that of a man who emitted the odor of violets during attacks of hypochondria.

* Brit. Med. Jour., Sept. 18, 1880, p. 463. See also Proc. Royal Soc., No. 205, 1880.

Treatment.—The treatment, speaking generally, is the same as that recommended for hyperidrosis. At the same time there are certain remedies and formulæ which are found of special value, particularly with reference to bromidrosis of the soles. A solution of permanganate of potassium, from one to three grains to the ounce of water, used as a wash, will sometimes act happily. A saturated solution of boracic acid (about fifteen grains to the ounce) is a valuable remedy, having a beneficial effect also on the reddened and excoriated skin. Thin advises the employment of cork soles for the shoes, and that they be soaked in a solution of boracic acid and dried before being used; and that, moreover, the socks be similarly treated. Chloral, from ten to forty grains to the ounce of water or of dilute alcohol, may also be recommended. The feet should first be bathed in soapsuds.

Dusting powders are also very useful. They have been referred to in considering hyperidrosis. Among the most valuable of these are alum and salicylic acid, either alone with starch or in various combinations. Bull* speaks of having had success, in an obstinate case affecting the axillæ, with oleate of mercury, ten per cent. strength, previously sponging with alcohol. In addition to the local treatment, in obstinate cases recourse may be had to the internal remedies mentioned in considering hyperidrosis. Hypodermic injections of pilocarpin have been successfully employed in bromidrosis pedum by Armaingaud,† and without inconvenience to the system.

CHROMIDROSIS.

Syn., Ephidrosis Discolor; Colored Sweat.

CHROMIDROSIS IS A FUNCTIONAL DISORDER OF THE SWEAT GLANDS IN WHICH THE FLUID POURED FORTH IS VARIOUSLY COLORED.

Symptoms.—In this affection the secretion of sweat is usually excessive and possesses positive color; it may be bluish, blackish, brownish, reddish, greenish, or yellowish. The bluish, blackish, and reddish colors are those most frequently encountered. It consists in an oozing of sweat, more or less profuse, which is observed to come directly from the openings of the ducts. The fluid possesses the properties of normal sweat and in addition the peculiar

* *Lancet*, May 8, 1880.

† *La France Méd.*, 1881, p. 128.

coloring matter. The disease is rare.* It must not be confounded with hæmatidrosis, where the corpuscular elements of the blood are found in the fluid poured out. It occurs generally in women, is much more frequent in unmarried than in married women, and is not infrequently connected with uterine disorders. It is usually associated with a nervous or debilitated condition. I have, however, recently observed a case of red chromidrosis in a strong, hearty man, where no cause could be assigned. Various regions may be attacked, but it has been noted more frequently upon the face, chest, abdomen, arms, hand, and feet. The amount of secretion may be slight or excessive in quantity. As a rule, the flow is not constant, but appears suddenly, remains for a short time, and then disappears again. It may come and go in this manner for a period of weeks or months. It is usually brought on by excitement, emotion, or passion, although it may appear without any exciting cause.

Pathology.—The disease is accounted for by an alteration of the secretion, caused sometimes by the presence of some abnormal coloring matter. Prussian blue, indican, copper, and other similar substances have been detected by analysis in the sweat, to which the color was doubtless due.

Treatment.—The treatment is to be directed against the general condition of the patient, which will usually be found to be one of chlorosis, anæmia, debility, or nervous disturbance.

URIDROSIS.—By this term (urinidrosis, sudor urinosus, urinous sweat, or sandy sweat) is meant an excretion from the sweat glands containing the elements of the urine, especially urea. This

* Numerous cases are on record which have been reported from time to time and collected, as in the monographs of Le Roy de Mericourt (*Mémoire sur la Chromidrose*, Paris, 1864) and of Hardy (*Nouveau Dictionnaire de Méd. et de Chir. Pratiques*, vol. vii., Paris, 1867). A. W. Foot has also made valuable contributions to our knowledge of the disease (*Dublin Jour. of Med. Science*, August, 1869, and December, 1873; also *Irish Hosp. Gaz.*, February 16, 1874). Cases are likewise reported by Purdon (*Jour. of Cutaneous Med.*, vol. ii. No. 7, and vol. iv. No. 13), and more recently by A. H. Smith (*New York Med. Jour.*, July, 1878) and Camuset (*Le Mouvement Méd.*, 1879, p. 419; see abstract, *Phila. Med. Times*, November 22, 1879). A collection of reported cases will be found in Dr. Pooley's article on the subject in the *Ohio Med. Recorder*, Jan. 1881.

latter has been found in the sweat of healthy persons in varying quantities. Under the influence of jaborandi large quantities have been excreted, Hardy and Ball* estimating the average amount to be seventeen grains for each sweating in the experiments conducted by them. Occasionally the amount excreted is excessive, and is appreciable on the surface of the skin. Such cases have been reported by Schottin† and Drasche,‡ in connection with cholera, and by Kaup and Jürgensen,§ Leube,|| Deininger,¶ and Taylor,** in diseases of the kidneys. Schottin records three cases and Drasche twelve cases out of eight hundred and five choleraic patients. It shows itself generally in the formation upon the skin, usually of the face and hands, of a colorless or whitish, saline, crystalline deposit or coating, which in some cases is said to have had the appearance "as though flour had been sprinkled over the surface," in others as though the skin "had been soaped by a barber," and of a "whitish covering, resembling hoar-frost, and sandy to the touch." The deposit is generally moderately adherent to the surface, but can be scraped off with a knife. Under the microscope, in Taylor's case, it was seen to consist of small white, irregularly-shaped masses, with crystalline prisms and spiculæ projecting from them. In the cases in which the details of the examination are given, the deposits were found to consist largely of urea, as proved by their solubility in water and alcohol, and by their yielding with nitric and oxalic acids characteristic crystals of the nitrate and oxalate of urea respectively.

In the great majority of cases the condition has been preceded or accompanied by partial or complete suppression of the renal function, and by disease of the kidneys and uræmic poisoning.

PHOSPHORIDROSIS.—Examples of phosphorescent sweat are very rarely encountered. Panceri,†† of Florence, records the case

* Jour. de Thérap., 1874.

† Archiv für Physiol. Heilkunde, 1851, p. 469.

‡ Die epidemische Cholera, Wien, 1860.

§ Deutsches Archiv für Klin. Med., Bd. vi. p. 55.

|| Ibid., Bd. vii. p. 1.

¶ Ibid., Bd. vii. p. 587.

** Guy's Hospital Reports, vol. xix., 1874, p. 405.

†† La France Méd., March 31, 1877. See also Cincinnati Lancet and Observer, May, 1877, p. 504.

of a physician who exhibited this phenomenon after eating of phosphorescent fish which had made the patient ill, the perspiration appearing luminous in the dark. The same condition has been observed in miliaria. The evolution of light from the living human subject has also been observed in the last stage of phthisis, and in other diseases of exhaustion. According to Carpenter,* Koster reports a case where the body-linen was rendered luminous by the perspiration after any violent exercise.†

SUDAMEN.

Syn., Miliaria Crystallina (Hebra).

SUDAMEN IS A NON-INFLAMMATORY DISORDER OF THE SWEAT GLANDS CHARACTERIZED BY PIN-POINT OR PIN-HEAD SIZED, TRANSLUCENT, WHITISH VESICLES.

Symptoms.—The vesicles are discrete, but crowded together in great numbers, and may exist upon any portion of the body; they have preference, however, for the neck, chest, abdomen, and other regions of the trunk. They are somewhat raised above the level of the surface, and may be felt as slight elevations. In appearance they resemble minute drops of free sweat. They are whitish or pearl-colored. They form quickly, and soon assume their definite size; their course is variable. Fresh crops may from time to time be developed. The lesions are discrete; they never run together; their contents do not become puriform; nor do they rupture. The fluid is absorbed, and the covering desiccating forms a thin, delicate membrane, which passes away in the form of slight desquamation.

Etiology.—The cause of sudamina may almost always be found in some constitutional or febrile disease. The disorder is of fre-

* Principles of Human Physiology, Phila., 1876, p. 550.

† For further information on this subject the reader is referred to Dr. Pooley's article, Ohio Med. Recorder, March, 1881.

Cases of so-called "galactidrosis," or "milky sweat," are reported in earlier literature, which on investigation are found to be expressions of other forms of disease. True galactidrosis, therefore, may be said not to exist. In many cases lymph was doubtless mistaken for milk. The manifestations in lymph-scrotum, as seen in Oriental countries, and of chylous urine, may be mentioned as bearing on this subject. Albumen, fat, sugar, and mercury and other drugs, are stated to have been found in the sweat. (See Pooley, Ohio Med. Recorder, March, 1881.)

quent occurrence in tuberculosis, typhus and typhoid fevers, acute articular rheumatism, and puerperal fever. It is caused by high temperature provoking unusual activity of the glands. It is common during hot weather, is ordinarily observed in those whose skins are delicate, and occurs both in children and in adults. Its presence is to be considered as a sign of general debility.

Pathology.—The affection originates in disturbance of the sweat glands. The glands become excited beyond their capacity for normal excretion, and, in place of the fluid finding its outlet upon the surface, from some cause it collects between the layers of the epidermis. It is in this manner that the vesicles are formed, as demonstrated by the anatomical researches of Dr. Haight, of New York.*

* Sitzungsberichte der Kais. Acad., Wien, 1868.

CLASS II.

HYPERÆMIÆ—HYPERÆMIAS.

IN this class are arranged those disorders which are characterized by the presence simply of an abnormal quantity of blood in the vessels supplying the skin. The condition may arise from a number of causes, and occasions various appearances upon the surface. The hyperæmic affections possess the following features. Redness of the skin is constant, and is present in all degrees of color, from pink or light red to dark red; it disappears upon pressure, but is seen to return instantly. The temperature of the part is usually elevated. The seat of the disorder is noted to be in the superficial portions of the skin, generally in the papillary layer of the corium. The hyperæmias occur in a variety of forms or patterns, usually without definite shape; they may be the size of a small coin or as large as the palm of the hand and even larger. Their course is for the most part acute; they often last but a few hours or days; in other cases they continue for a longer period. Slight itching or burning sensations at times accompany them.

Hyperæmias may be classified into *active* and *passive*. Both forms may, further, very properly be divided into those which are *idiopathic* and those which are *symptomatic*.

Idiopathic active hyperæmias are, in a strict sense, local affections. They include those disorders occasioned by the direct application of irritating agencies to the skin. Symptomatic active hyperæmias are, on the other hand, due to general disturbance of the system, which usually has its chief seat in some region of the body distant from the skin.

Idiopathic passive hyperæmias are due to external causes; they comprise the various so-called lividities of the skin. Mechanical

causes, in the form of severe or continued pressure upon the skin; direct obstruction to the circulation, produced by bandages, articles of dress, etc., and cold, may be referred to as the most frequent sources of this kind of hyperæmia.

Symptomatic passive hyperæmia occurs in those cases where there is some imperfection in the function either of the circulation or of the respiration. It manifests itself by a more or less general bluish or purplish discoloration of the skin; as seen, for example, in cyanosis.

ERYTHEMA SIMPLEX.

ERYTHEMA SIMPLEX IS A HYPERÆMIC DISORDER CHARACTERIZED BY REDNESS, OCCURRING IN THE FORM OF VARIOUSLY SIZED, DIFFUSED OR CIRCUMSCRIBED, NON-ELEVATED PATCHES.

Symptoms.—It consists in a more or less congested state of the skin, marked by the symptoms which have been already enumerated as belonging to the hyperæmias. The causes which give rise to it are numerous, and are, moreover, diverse in their nature; they comprise heat, cold, injuries, poisons, irritating substances of all kinds, certain systemic diseases, and disorders of internal organs, as of the alimentary canal, etc. It may be idiopathic or symptomatic.

IDIOPATHIC ERYTHEMA.

Erythema from Caloric.—Under this head are included the erythemias occasioned by heat and cold. Both of these agencies, at certain temperatures, bring about simple congestion of the skin; carried beyond this point they provoke exudation from the vessels, or inflammation. Artificial heat, the rays of the sun, etc., are among the well-known and commoner causes of this form of erythema.

Erythema from Traumatism.—Simple erythema may also be occasioned by traumatism, as, for example, continued pressure, rubbing, etc. It is observed as the result of tightly-fitting garments, bandages, trusses, etc.

Erythema from Poisons.—Poisons of all kinds play an important part in the production of erythema. Many substances, both mineral and vegetable, act injuriously upon the skin. A few of these, as mustard, sulphur, arnica, various dye-stuffs, acids, and

alkalies, may be mentioned as not infrequently giving rise to cutaneous disturbance.

SYMPTOMATIC ERYTHEMA.

Here are to be placed all those simple erythemas, or rashes, which occur in the course of certain systemic diseases or as the result of some general derangement of the economy. They may occur upon any portion of the body, commonly upon the trunk. A knowledge of these erythemas is extremely necessary, for they frequently simulate other more serious affections. Simple erythemas due to disorders of the internal organs, as the stomach and bowels, are of very frequent occurrence in infants and young children. They may assume various markings and patterns, and may be either slight or well defined in their expression. At times they are persistent; in other cases they dispose to relapse from time to time. Certain general diseases are at times accompanied with hyperæmia of the skin, which shows itself in the form of roundish spots, the size of a pea or finger-nail, to which the term *ROSEOLA* has been given. It denotes simply the peculiar *form* of the erythema, and in no degree indicates the nature of the disease which has brought it forth. Thus, roseola is at times employed to express one of the first lesions of syphilis upon the skin; also the erythema which is sometimes observed in connection with vaccinia or with variola.

Diagnosis.—From what has been said it is manifest that the boundary line between simple erythema and dermatitis—simple inflammation of the skin—is frequently ill defined. As stated in considering the subject of hyperæmia in connection with the general pathology of the skin, it is often difficult to determine exactly when exudation commences; clinically, however, usually no trouble of this character presents itself, for the subjective symptoms in affections attended with exudation are so decided as scarcely to permit of doubt concerning the pathological change.

Treatment.—This must obviously depend upon the nature of the erythema, with special reference to the cause. The idiopathic erythemata require nothing beyond the removal of the cause, which is in all instances sufficiently patent. In cases of persistent symptomatic erythema, such as are of common occurrence in infants, the internal disorder to which the cutaneous manifestation

is due must be sought for. Local applications, where they are demanded, should be employed as the case under consideration may require; for this purpose the various bland dusting powders, soothing ointments, and those to be mentioned in connection with erythema intertrigo, may be used.

ERYTHEMA INTERTRIGO.

ERYTHEMA INTERTRIGO IS A HYPERÆMIC AFFECTION CHARACTERIZED BY REDNESS, HEAT, AND AN ABRADED SURFACE WITH MACERATION OF THE EPIDERMIS.

Symptoms.—It occurs chiefly in those parts where the natural folds of the skin come in contact with one another, as about the nates, perineum, groins, axillæ, and beneath the mammæ, and is usually produced by the friction of two opposing surfaces. It is especially common in fat persons, and in infants whose skins are tender. The skin becomes chafed, and feels hot and sore. Perspiration also at times takes place, which acting upon the epidermis macerates it, and gives rise to an aerid, mucoid fluid. If the process be not speedily arrested at this stage, symptoms of inflammation may appear.

The affection usually makes its advent suddenly, and unless checked by the removal of the cause soon becomes annoying to the patient; properly managed in its early stage, it ordinarily passes away as rapidly as it came. It may last but a few hours, or, on the other hand, it may continue for weeks. Occurring between the nates, its common seat, it is often troublesome, and may interfere with walking or sitting. It is apt to be more or less persistent in infants; with proper care and treatment, however, it rarely causes much annoyance. It is liable to relapse.

Etiology.—It is for the most part an affection of hot weather, although it may occur in winter if sufficient cause be present: thus, in infants it is seen at all seasons of the year. It may be either idiopathic or symptomatic in its origin. Unusual exercise, sedentary habits, sitting for a long time on cushioned seats, excessive underclothing, and other conditions which occasion more than usual warmth of the body, all favor its development. The cause is always to be found in an undue amount of heat about the parts affected, arising either from friction or from permitting the

opposing surfaces exposed to warmth to remain for some time in contact with each other. In children, and in those whose skins are particularly delicate and sensitive, simple rubbing, as from a garment, may be sufficient cause. This is often observed in the newly-born. In infants, as in the case of symptomatic simple erythema, the cause may not infrequently be found in stomach or bowel derangements, worms in the alimentary canal, teething, and other general disorders.

Treatment.—As a rule, little is required beyond ordinary care. The parts should be washed with cold water and castile soap, or with bran-water, and dried with a soft rag or towel. The folds of the skin are to be separated and kept apart with lint or with a piece of linen cloth. Dusting powders constitute the best topical remedies; they may be prepared with starch, together with oxide of zinc, talc, and similar substances, in varying proportions, as, for example, in the following:

R Pulv. Oxidi Zinci, ℥ii;
Pulv. Amyli, ℥vi.
M.—Sig. Dusting powder.

In cases which prove obstinate I am in the habit of using diluted lotio nigra as an application. Applied once or twice a day, followed by the use of some bland powder, as the above, it is an efficacious remedy. Dilute alcoholic lotions may also at times be employed. Astringent lotions, composed of alum, acetate of lead, sulphate of zinc, acetate of zinc, a few grains to the ounce, also prove serviceable in rebellious cases. A weak solution of corrosive sublimate will also be found useful in some cases. The various remedies to be mentioned in considering the treatment of acute erythematous eczema may likewise be resorted to.

CLASS III.

EXSUDATIONES—INFLAMMATIONS.

THE exudations, or inflammations, constitute by far the largest and most important group of the diseases of the skin. They include all those affections which are characterized by inflammation. In this class are to be found urticaria, eczema, psoriasis, acne, and a number of other common diseases with which the physician finds himself in daily contact. The various affections are exceedingly diverse as regards their external form and character, some manifesting themselves as erythema; others as papules, vesicles, pustules, and blebs, together with their secondary products, scales, crusts, etc.; while yet another class appear as diffused, more or less deep-seated inflammations, involving not only the skin but also the subcutaneous structures.

The exudations vary extremely as to their course; some are acute, and terminate in spontaneous recovery; while others, the majority, incline to become chronic and to continue indefinitely. Some are simple and benign in their nature; others are most distressing to the patient, and at times disastrous in their consequences. Their causes are manifold; in many cases they are singularly different. Their pathological features alone entitle them to be grouped into one class; these have been already considered in connection with the subject of general inflammation.

ERYTHEMA MULTIFORME.

ERYTHEMA MULTIFORME IS AN ACUTE INFLAMMATORY DISEASE CHARACTERIZED BY REDDISH, MORE OR LESS VARIEGATED, MACULES, PAPULES, AND TUBERCLES, OCCURRING DISCRETELY OR IN PATCHES OF VARIOUS SIZE AND SHAPE.

Symptoms.—The disease is usually marked by the variety of its lesions, which manifest themselves either as erythematous patches

or as papules, vesico-papules, and tubercles. When patches occur, they are apt to be of the most varied shapes and sizes. The peculiarities of configuration which the lesions assume have given rise to the terms *annulare*, *iris*, and *marginatum*, in connection with the disease, according as they happen to represent one or another of these forms. When the patch is circular in form, fading in the centre as the disease extends to the periphery, it is termed *ERYTHEMA ANNULARE*. Occasionally a series of concentric rings are formed, possessing variegated colors, as red, purple, yellow, and blue, the condition being designated *ERYTHEMA IRIS*. At times the patches, after spreading over a considerable surface, gradually fade in the centre, and terminate with a sharply-defined border, the disease consisting at this stage simply of serpentine lines or bands, this form being known as *ERYTHEMA MARGINATUM*.

In place of an erythematous patch, the disease frequently appears in the form of distinct papules and tubercles, which occurrence has given rise to the names *ERYTHEMA PAPULOSUM* and *ERYTHEMA TUBERCULOSUM*. The former of these varieties is that in which the affection is commonly encountered. It consists of isolated or aggregated flat papules, variable as to size and shape. They are bright red, violaceous, bluish or purplish in color; disappear in part under pressure, and soon fade, seldom lasting longer than a week or a fortnight. *Erythema tuberculosum* is to be viewed simply as an exaggeration of the papular form of the disease. All of these varieties are but different forms and stages of one process. In a given case it is not rare to see several of these manifestations. They frequently run into one another. It is this protean character of the lesions that has given rise to the name by which the affection is known,—*erythema multiforme*.

The course of the disease is an acute one; it may continue for a few days or for two or three weeks, at the end of which time it disappears spontaneously, leaving, perhaps, slight pigmentation and desquamation. During its course new crops of lesions are apt to develop, appearing from time to time in the place of those which have faded away.

It attacks certain regions of the body in preference, the backs of the hands and feet, and the arms and legs, being the localities commonly invaded. The hands and fingers are most frequently

attacked.* It usually occurs symmetrically. It may also show itself about the face, especially the forehead, in the form of macules, maculo-papules, and papules, and also upon the trunk. Occasionally it attacks the mucous membrane. Sometimes it is general, involving the whole surface, in which case it is usually erythematous in form.

The subjective symptoms are seldom troublesome. As a rule, the itching and burning are slight, notwithstanding the angry look which the eruption often assumes. Symptoms of general disturbance may or may not accompany the complaint; not infrequently, however, in extensive cases, malaise, headache, rheumatic pains, and gastric derangement are present. It is seen for the most part in early adult age.

Etiology.—The affection is somewhat peculiar, in that it very often makes its appearance during the spring and autumn. It is, however, also seen at other periods of the year.† The causes are for the most part obscure. The papular form, however, is sometimes called forth by a derangement of the stomach; in these cases it is observed to run a course somewhat similar to that of urticaria. It is often accompanied with rheumatism, and in some instances bears a resemblance to purpura rheumatica. Lewin considers genito-urinary diseases as disposing to call forth the efflorescence. It occurs in both sexes, but is more common in the female.

Pathology.—It must be classed with the exudative affections, occupying a position by the side of urticaria, with which it sometimes possesses certain points in common. Lewin‡ and others regard the process as a vaso-motor disturbance. The close relationship between it and herpes iris has long been recognized; the latter disease is in reality but an advanced stage of erythema iris. Up to the point of vesiculation it is an erythema multiforme, while beyond this stage it is called herpes iris. They are, therefore, notwithstanding their usual separation (which rests purely

* See Plate CC in my Atlas of Skin Diseases.

† For further information upon this and other points of interest relating to the disease, see a report by Lipp, *Archiv für Dermatologie und Syphilis*, vol. iii. p. 221; also an able article by Moriz Kohn (Kaposi), in the same journal, vol. iii. p. 381, and communications by Lewin, *Berl. Klin. Wochenschr.*, Nr. 23, 1876, and *Charité Annalen*, Bd. iii. p. 622.

‡ *Berl. Klin. Wochenschr.*, Nr. 23, 1876.

upon anatomy), one and the same process. The relationship to erythema nodosum is likewise close, some cases of this disease being clinically merely severe expressions of the affection under consideration. In other cases, however, the diseases seem to have distinctive points of difference. Of the morbid anatomy of the lesions nothing definite, beyond their inflammatory nature, is known.*

Diagnosis.—When the peculiar appearance and acute course of the lesions, together with their multiform character, are borne in mind, no difficulty should occur in the diagnosis. The absence of violent itching or burning sensations will serve to distinguish it from urticaria, the affection to which it bears closest resemblance. It differs from urticaria, moreover, in that the eruption is usually more pronounced in character, is of a more decided color and form, is more persistent in its course, and in the absence of wheals. From eczema papulosum it is to be distinguished by the absence of severe itching, and by the large size of the papules, as well as their irregular shape and form. The difference between herpes iris and erythema iris being one only of development, they are often seen to merge into each other; the diagnosis here would be one simply concerning the name. If there were no vesicles present, it would be termed an erythema; while if these had formed, the term herpes would be employed. Erythema nodosum is to be diagnosed from erythema multiforme by its prominently raised, rounded, firm tumors or nodes, which occur for the most part on the extremities, and in particular along the line of the tibiæ.

Treatment.—In the majority of cases no active treatment is called for. The bowels should be opened by a saline laxative, which may be repeated from time to time. Full doses of quinine may also be administered in the beginning of the attack. The diet should be light, all stimulating articles of food and drink being avoided. The local applications should be of the simplest character. Lotions of equal parts of alcohol and water, or of carbolic acid, a drachm or two to the pint of water, will be found useful where there is itching. Dusting powders of starch and oxide of zinc, equal parts, are of service in protecting the inflamed surface.

* See the researches of Campana, Viertelj. für Derm. u. Syph., 1878, p. 318.

Prognosis.—The affection runs a spontaneous course towards recovery. With or without treatment, it usually terminates in from two to four weeks without leaving any trace of its former existence. It is a benign disease. Relapses are liable to recur from time to time, especially from year to year.

ERYTHEMA NODOSUM.

Syn., Dermatitis Contusiformis; *Fr.*, Érythème Nodieux.

ERYTHEMA NODOSUM IS AN ACUTE INFLAMMATORY DISEASE CHARACTERIZED BY THE FORMATION OF ROUNDED OR OVALISH, VARIOUSLY-SIZED, MORE OR LESS ELEVATED REDDISH NODES.

Symptoms.—The disease is apt to be ushered in with some disturbance of the system. Later, febrile symptoms may be marked, and the temperature high. The nodes make their appearance often suddenly, and may exist upon various regions of the body, although they have decided preference for the arms and legs, especially the latter region over the tibiæ. They vary in size from a small nut to an egg; are ovalish or rounded in shape; and are sometimes prominent and well defined in outline. In color they are reddish with a tendency to become bluish or purplish, becoming darker as they grow older. As they disappear they assume a variegated yellowish, greenish, or bluish tint, resembling the coloration of a contusion. When the disease is at its height the lesions have a shining, tense look, as though suppuration were about to take place; this process, however, does not occur, for they invariably result in absorption. Not infrequently they are more or less hemorrhagic in character. To the touch they are usually firm, but they become softer as they are about disappearing. In number they may vary from one or two to a dozen or more; they may occupy the legs only, or various regions of the body at the same time.* As a rule, they do not all appear at once, but come out at intervals in the form of crops, accompanied by slight febrile symptoms. They are painful and tender on pressure, and are usually attended by burning sensations. Sometimes the lymphatic vessels are involved. The affection generally terminates in spontaneous recovery, lasting from two to four weeks. Uffelmann†

* See Plate V in my Atlas of Skin Diseases.

† Viertelj. für Derm. u. Syph., 1874, p. 174; 1877, p. 230.

and Oehme,* however, have described an ominous form of the disease occurring in tuberculous families, and for the most part in young persons. In the autopsies tuberculosis of the internal organs was found. Like erythema multiforme, the disease may invade the mucous membrane. Both sexes suffer, but it is more frequent in females. It commonly occurs in childhood and early adult life.

Etiology.—The causes of the disease are by no means understood. It is usually met with in weakly individuals. Loss of appetite, languor, and other symptoms of malaise may precede the outbreak. Rheumatic pains are also generally present, both before and during the attack. Digestive derangements, as well as other functional disturbances, are also sometimes noted. Like erythema multiforme, to which disease it is allied, it often shows itself in the spring. It is a comparatively rare disease. According to the statistics of the American Dermatological Association, 27 cases out of 16,863 cases of skin disease are reported. It is, however, commoner than these figures would indicate.

Pathology.—Its nature is involved in some uncertainty. It is an inflammatory process, very similar in character to the several manifestations of erythema multiforme, but severer in type, and sometimes possessing certain symptoms which are not encountered in this disease. While recognizing, therefore, a relationship to erythema multiforme, it may for the present be considered separately. Hebra† appears to think that in some cases at least it is essentially an inflammation of the lymphatics, the nodes being frequently observed seated on the course of these vessels. But, as Hebra states, this view does not hold good for all cases met with. Bohn‡ is of the opinion that each tumor is an inflammatory infarction, caused by embolism in the cutaneous vessels. He consequently regards the affection as being closely allied to purpura rheumatica. In some cases the exudation is of a serous character, but in other instances it is hemorrhagic. The process varies in intensity.

Diagnosis.—It is not to be mistaken for the result of external

* Viertelj. für Derm. u. Syph., 1878, p. 324.

† Diseases of the Skin, vol. i. p. 291, New Syd. Soc. translation. London, 1868.

‡ Jahrbuch für Kinderheilkunde, Heft 4, 1868.

violence. The swellings at times bear a close resemblance to bruises, and may readily be confounded with injuries of this kind. The disease also simulates erysipelas, especially if it occur about the face, but may be distinguished from it by the presence of the nodes or circumscribed infiltrations, and by other symptoms. The lesions at times resemble threatening abscesses; but their previous history, number, situation, and course will always serve to characterize them. They can scarcely be confounded with furuncles. The affection may be diagnosed from the papular and tubercular varieties of erythema multiforme by the presence of the nodes and the deep-seated character of the disease.

Treatment.—No active treatment is called for, inasmuch as the complaint ends in spontaneous recovery. The febrile symptoms may be combated by such remedies as seem indicated. Symptoms of functional derangement should be corrected. The bowels are generally constipated, and are best relieved by a saline laxative. The alkaline natural mineral waters may be prescribed with advantage. A simple diet should be ordered, together with such remedies as may seem proper. In females, the preparations of iron are often given with benefit. Quinine in large doses is also useful. If the affection be extensively developed upon the lower limbs, rest and the recumbent position should always be enjoined. Local applications are of little avail; warm fomentations or cold applications, or such remedies as would be indicated in the treatment of contusions, are at times useful in affording relief when the parts are painful. Strong applications should never be employed.

Prognosis.—This is generally favorable. The disease seldom lasts longer than three or four weeks. Relapses are rare.

URTICARIA.

Syn., Nettle-rash; Hives; Febris Urticata; *Germ.*, Nesselausschlag; *Fr.*, Urticaire.

URTICARIA IS AN INFLAMMATORY AFFECTION CHARACTERIZED BY THE DEVELOPMENT OF WHEELS OF A WHITISH, PINKISH, OR REDDISH COLOR, ACCOMPANIED BY STINGING, PRICKING, TINGLING SENSATIONS.

Symptoms.—The disease shows itself by the sudden formation of wheals, of variable size, shape, and color. They vary greatly as to size; at times they are no larger than a split pea, while in

other instances they occupy extensive tracts of the surface; ordinarily they are small finger-nail or bean sized. They may occur as circumscribed, isolated efflorescences, or in the form of patches, caused by a number of the lesions having coalesced. All large patches are formed in this manner. Wheals likewise vary exceedingly as to shape; they are usually roundish or oval, but may exist in an endless number of forms. Lines, streaks, crescents, and irregularly-shaped patches, may all in turn be formed. At times the configuration is curious or even grotesque. They are observed either as very slight elevations, barely perceptible above the level of the skin, or as raised prominences several lines or more in height. To the touch they may be soft or firm. In color they are whitish, pinkish, or reddish, and at times are variegated or streaked. They are commonly surrounded by a more or less distinct areola. No trace, as a rule, follows their disappearance.

The subjective symptoms are burning, tingling, stinging sensations, likened to the sting of the nettle. They may be simply annoying, or, on the other hand, exceedingly distressing. The patient impulsively scratches, which, though it in part relieves the disagreeable sensation, always causes more of the efflorescence to appear.

Urticaria as ordinarily encountered is the most ephemeral of cutaneous diseases. Its advent is usually sudden, a few minutes not infrequently sufficing for its development; it may remain upon the surface for but a few moments, or for an hour or longer. Even while the eruption is out, individual wheals are generally extremely fugitive in their character, coming and going in a most arbitrary manner. The disease often leaves one portion of the body to show itself in a remote part; it may also repeatedly change its location, shifting its seat from time to time without apparent cause. All regions of the body, including the scalp and the mucous membrane, are liable to its attacks; the whole surface or only a part may be invaded. It has no regions of predilection, but is apt to occur upon those parts which are subject to pressure or hyperæmia from the contact of the clothes. It occurs at all periods of life, and attacks both sexes. Children are particularly subject to it. It is ordinarily an acute disorder, lasting but a few hours or days, during which time frequent exacerbations may take place. Its duration depends entirely upon the presence or the removal of the exciting cause. It may also occur as a chronic affection, the relapses taking

place with such frequency, and extending over so long a period, as to warrant the use of the term chronic.

There are several varieties of urticaria, named according to peculiarities in the confirmation of the anatomical lesion, which call for particular description.

URTICARIA PAPULOSA.—This is a variety of the disease which, on account of its peculiar character and frequency, calls for special remark. It is also known as **LICHEN URTICATUS**. Here the lesion possesses the form of a papule with the characteristics of a wheal. It is observed particularly in young children, and shows itself as pin-head or split-pea sized, flat or acuminate papules, which appear, as a rule, suddenly, and, after continuing hours or days, slowly disappear. They usually occur in a dispersed manner over the body, and are rarely seen in great numbers. They are attended with intense itching. Owing to the scratching of the patient, their apices are usually more or less torn and covered with blood crusts. The disease is generally most annoying at night. The children in whom this form of urticaria is noted are, as a rule, badly cared for and improperly nourished; but it may also occur in the upper walks of life. In my experience in Philadelphia this form of the disease is by no means common. In London I saw at the clinics many such cases.

Urticaria is of not infrequent occurrence in the course of other diseases. It is necessary, therefore, to distinguish those cases in which it is the sole disorder and those in which it exists as a complication or as a secondary affection. It is seen as a complication in several diseases, and often plays so active a part as quite to overshadow the primary lesion. Purpura is sometimes the seat of urticaria, a mixed lesion resulting, half hemorrhage and half wheal, whereby the presence of the hemorrhage is often obscured. The urticarial element, however, is observed to be secondary. This occurrence has given rise to the terms **URTICARIA HEMORRHAGICA** and **PURPURA URTICANS** or **URTICATA**. A disposition to the formation of bullæ is now and then observed in connection with urticaria, producing an eruption partaking of the nature of both blebs and wheals. When this occurs, the wheals usually form first, but are displaced by blebs, which may assume the characteristics of the bullæ of pemphigus. This peculiar and rare combination of symptoms has occasioned the term **URTICARIA BULLOSA**.

Occasionally large, walnut or even egg sized, firm, more or less persistent nodes or tumors are formed, resembling somewhat exaggerated lesions of erythema nodosum, constituting URTICARIA TUBEROSA.*

ACUTE URTICARIA.—According to the cause will the disease make its appearance in one way or another. It is, however, usually ushered in with slight febrile symptoms, accompanied by languor, headache, depression, gastric derangement, furred tongue, and other signs of systemic disturbance. The efflorescence appears suddenly, so that in an hour's time the whole body may be more or less invaded. In other cases only a portion of the body, as the face, the trunk, or the limbs, is involved. The wheals are remarkable for their capricious nature. They appear and disappear many times in the course of the attack, but do not, in preference, return upon the old site. About the head they have a tendency to show themselves upon the forehead, ears, and nose, producing considerable swelling and disfigurement. They usually occur isolated here, and do not incline to run together to the same extent as upon the trunk; in the latter region large, solid patches of wheals, the size of the palm or even much larger, are not uncommon. The burning and stinging sensations are now intense and almost intolerable. In a variable time, from an hour to a day, the symptoms begin to subside; new wheals cease to appear, and the efflorescence by degrees fades away until no traces of it remain. The termination of the attack is greatly influenced by the removal of the exciting cause, as well as by active treatment. Relapses may take place.

CHRONIC URTICARIA.—Here the condition, viewed as a whole, is of a chronic nature, and continues for months or years, or, indeed, as long as the cause exists. The individual wheals incline to come and go in the same evanescent manner as in the acute form, but the patient is rarely entirely free from them. No sooner has one crop disappeared than another starts up, the skin sometimes being in an almost constant state of efflorescence. In other

* This form of the disease was first described by Milton in 1856, and later in his work on Diseases of the Skin. London, 1872. In a monograph, with the title Giant Urticaria, the same author gives two additional cases, accompanied with a colored portrait. London, 1878. Juler has also reported a case. Cincinnati Lancet and Observer, January, 1878.

eases the eruption is intermittent. At times the wheals are persistent, and last for hours or longer. The symptoms of general disturbance, so prominent in acute urticaria, are usually wanting, the individual often seeming to enjoy average general health.

Etiology.—The causes of urticaria are numerous and of a very diverse nature. Certain external irritants and poisons to the skin are capable of producing it in a marked degree: thus, the stinging nettle, jelly-fish, caterpillars, fleas, bed-bugs, and mosquitoes are not infrequent causes. The more sensitive the skin the greater will be the disturbance when such agents are brought into contact with it. Among the internal causes, gastric and intestinal derangements are by far the most common; they may be looked upon as productive of the majority of acute urticarias. Thus, an overloaded stomach, excess in wine, or highly-seasoned food, may occasion an attack; while certain articles of food, as fish, oysters, clams, crabs, lobsters, pork,—especially sausage,—oatmeal, mushrooms, raspberries, and strawberries, are all known to play a conspicuous part in calling forth the affection. A number of medicinal substances, taken internally, may likewise occasion an urticarial form of disease; of these, copaiba, enbebs, turpentine, valerian, chloral, salicylic acid, salicylate of soda, iodide of potassium, and quinine may be mentioned.* It will be understood that in cases in which the eruption is produced by the ingestion of any of the above enumerated articles, a more or less pronounced idiosyncrasy exists. Any irritation in the bowel may give rise to the affection, as, for example, intestinal worms, especially in children. Sudden emotion or unusual excitement, in some individuals, may be sufficient to bring it out. In females, menstrual and uterine difficulties, pregnancy, and lactation, are sometimes accompanied by urticaria. Organic disease of the uterus may also give rise to the affection. Malaria may likewise be viewed as one of the causes of chronic urticaria. The disease is intimately associated with the nervous system. It is often noted in connection with various nervous disorders, as spinal irritation, neuralgia, and asthma, and with albuminuria. There is also at times a close relationship between it and certain general diseases, as purpura and rheumatism. The causes of chronic urticaria are usually obscure; not infrequently

* See Dermatitis Medicamentosa.

they may be found in spinal irritation or in organic disease of certain organs, as, for example, the uterus or kidney. Sometimes the causes are so slight as to be scarcely reconcilable with the amount of local disorder. Mode of life, habit, exercise, change of air, are all known to exert an influence over the affection.

Pathology.—Upon close examination, a wheal is seen to be a more or less firm elevation, consisting of a circumscribed collection of semi-fluid material which has been suddenly exuded into the upper layers of the skin. The process is an acute, inflammatory one, and has its seat, for the most part, in the papillary layer. Neumann* excised and examined with the microscope wheals which had been excited by the sting of the nettle upon rabbits. The condition found was that of marked œdema of the tissues, with a diminution in the supply of blood. Vidal† found in sections of skin affected with urticaria the superficial and deep vessels of the corium dilated and filled with blood, without alteration of the vascular walls. Both the bloodvessels and the lymphatics were surrounded by a large number of leucocytes, which were also found throughout the whole thickness of the corium, and in fewer numbers between the deeper cells of the epidermis. The circulation in a wheal is always seriously interfered with. The blood is driven from the centre to the periphery, producing the characteristic whitish apex and red areola. What part the nerves, and what part the muscular fibres of the skin, take in the production of wheals cannot be definitely stated. There can be no doubt, however, that the nerves play a very important part in their formation, and it is probable that the vaso-motor system is concerned in their production. The wheals of urticaria papulosa are peculiar, consisting primarily of a wheal, which induces subsequently a deposit of plastic material. Eulenburg regards the disease as an angioneurosis.

Diagnosis.—When the nature of the anatomical lesion is called to mind, no difficulty should arise in distinguishing urticaria from other affections. Moreover, the peculiar sensations of pricking, burning, and stinging, together with the sudden appearance of the efflorescence, are characteristic. Its presence as a complication

* Hand-Book of Skin Diseases, p. 135. Amer. ed., New York, 1872.

† Annales de Derm. et de Syph., 2me sér., vol. i. No. 3.

with other diseases may sometimes lead to confusion in the diagnosis; but in these cases it is to be remembered that it is only a secondary production or complication, and consequently of minor importance. Erythema papulosum and tuberculosum may be confounded with urticaria; but they can generally be diagnosed by the absence of marked itching. In erythema there are, moreover, no wheals, but papules, which possess a different history. Erythema nodosum bears some resemblance in appearance to the tuberoso form of urticaria; but the tumors in erythema are usually firmer and more persistent, and, as a rule, are unattended with itching. Urticaria should not be mistaken for erysipelas, an error which might occur when it is extensively developed over the face. When the disease is disappearing, the more or less pigmented lesions may resemble syphilis.

Treatment.—The first point in the management of a case of urticaria is the thorough investigation of the cause which has given rise to the attack. In the greater number of cases this may be detected, and will be found to consist in some of the disorders referred to in speaking of the etiology. To remove or relieve these, is the work to be at once taken in hand. When the disease is acute and due to gastric disturbance, the treatment is to be regulated somewhat by peculiarities of the individual, and also by the severity of the attack. The articles of food which the patient has been partaking of should be rigidly inquired into; their quality, as to freshness, should also be made a matter of scrutiny. In severe cases an emetic of sulphate of zinc, ipecacuanha, or mustard may be administered, especially if food is still in the stomach. The bowels should be evacuated at once, and for this purpose one of the saline purgatives, such as sulphate of magnesium or Rochelle salt, will be found useful. Free movement from the bowels should in every case be obtained as soon as possible. The repeated use of mild aperients, moreover, should be continued until recovery has taken place. The diet should be of the simplest kind, with the avoidance of all stimulating food and drink. Other cases, not caused by any discernible intestinal derangement, may often in like manner at first be treated advantageously by saline draughts, after which the mineral acids or other remedies, and a strict dietary regimen, may be prescribed. But the treatment for a given case cannot be determined until its nature and cause have been inves-

tigated. Where there is a disposition to acidity of the stomach, a condition of frequent occurrence, alkaline preparations are invaluable. Bicarbonate of sodium in five or ten grain doses, often repeated, lime-water, liquor potassæ in small doses, and other similar remedies may be employed. Subnitrate of bismuth, combined with small doses of calomel and opium, is likewise useful in allaying the irritability of stomach which sometimes follows acute urticaria. The alkaline mineral waters are often refreshing and agreeable to the patient.

In chronic urticaria the bowels should be regulated by means of laxatives, preferably saline aperients. The food should be nourishing but plain. Attention should be directed to the state of the general health. Inasmuch as the causes are often exceedingly diverse in their nature, and are in many instances obscure, each case will require special study. The cause will frequently be found to be apparently insignificant, and altogether out of proportion to the amount of cutaneous disturbance. Whatever the derangement, no matter how slight, it should at once be remedied, if possible. In many cases diuretics are indicated. The acetate of potassium in twenty or thirty grain doses, well diluted, may be mentioned, also the Poland Spring water (of Maine), as a serviceable remedy. The natural alkaline waters, as, for example, those of Vichy, Carlsbad, and Saratoga (Saratoga Vichy Spouting Spring), may at times be used. If gouty symptoms are present, they must be encountered by the use of alkalies, colchicum, or other means adapted to the requirements of the case. Quinine often proves a valuable remedy, not only in cases bearing an intermittent type, but also in other instances. It should be given in full doses, once (at night) or twice in the twenty-four hours. Salicylate of sodium is well spoken of by Pietrzycki* in cases where quinine is indicated but fails, in twenty grain doses thrice daily. Pilocarpin is favorably mentioned by Pick,† of Prague, who reports cures. Atropia has been recommended by Schwimmer,‡ and also by Fraenkel.§ Small doses of the tincture of belladonna repeated every two or three hours until the system is impressed will also be

* Quoted in London Med. Record, Nov. 15, 1879.

† Quoted in Phila. Med. Times, vol. x. p. 452.

‡ Viertelj. für Derm. und Syph., 1879, Heft 1, p. 134.

§ Quoted in Phila. Med. Times, vol. ix. p. 352.

found useful. Copaiba has been successfully employed in some cases; likewise chloride of ammonium, in ten or twenty grain doses, a remedy of value to which my attention was directed by Dr. Trent, of Brooklyn. The sulphite and hyposulphite of sodium may also be referred to as remedies worthy of trial in obstinate cases. Arsenic is of undoubted service at times when other remedies fail, and is well spoken of by Wilson, Milton, Hardy, and others. Bromide of potassium, chloral, and other sedatives will be found useful to calm the nervous system, which is often much disturbed by long suffering. According to McCall Anderson, in some cases, where the disease is persistent and due to no appreciable cause, bromide of potassium in full doses may be given with the hope of permanent relief. Change of climate sometimes proves of benefit when all other means have failed.

Local treatment is of great importance. The burning and stinging sensations peculiar to this affection are generally so distressing as to call for the most prompt and energetic external remedies. The patient should be divested of all irritating underclothing. The bed-coverings at night should be light, and the sleeping apartment kept cool. Baths and lotions constitute the most desirable method of applying remedies. They may be prepared with various substances, and may be used either warm or cold, as may seem to afford the most relief.

As the disease is apt to be rebellious to treatment, I shall refer to a number of remedies, for experience teaches that where one fails another may prove serviceable. Sponging the parts with vinegar and water at times affords ease. Salt water baths may also be used with good result in some cases. One of the best remedies is alcohol, in one form or another, as, for example, brandy or whisky. It may be applied as a lotion, either diluted or in full strength, and will in the majority of cases be found to give decided relief. Alkaline baths, made with the carbonates of sodium and potassium, often afford relief. For an ordinary tub, containing about thirty gallons of water, three or four ounces each of the carbonate of sodium and bicarbonate of potassium constitute the average strength. A handful of starch, boiled in a quart of water, may be added to the bath with advantage. Starch, gelatine, or bran baths, prepared in the same manner indicated, are also scr-

viceable. Sulphuret of potassium, from one to two ounces to the bath, may at times be employed with good result. Acid baths, containing hydrochloric and nitric acids, half an ounce to thirty gallons of water, are also recommended. Carbolic acid with water, from one to four drachms to the pint, may be employed with excellent result; I frequently employ the following:

R Acidi Carbolici, ʒiiss;
 Glycerinæ, fʒii;
 Alcoholis, fʒviii;
 Aq. Amygdal. Amar., fʒviii.
 M.—Sig. Use as a lotion two or three times daily.

Thymol, a grain to the ounce, in a mixture similar to the above, will likewise be found of value. Benzoic acid with water, a few grains to the ounce, or with alcohol, ten to twenty grains to the ounce, may be referred to. Benzoic acid and borax, each five or ten grains to the ounce of water, may likewise be mentioned. Chloral, ten to twenty grains to the ounce; chloral and camphor, equal parts, a drachm to the ounce of ointment; chloroform; corrosive sublimate, five grains to the pint; bromide of potassium, from four to eight drachms to the pint; dilute hydrocyanic acid, one to three drachms to the pint, may be mentioned as being useful. Acid lotions, as, for example, of acetic and citric acids; dilute ammonia water; and carbonate of ammonia, ten to twenty grains to the ounce, may also be found serviceable.

Prognosis.—A few days usually suffice for the relief of acute urticaria when due to gastric derangement. Relapses in these instances are liable to occur whenever the patient is exposed to the exciting cause. The chronic variety is of a more serious nature, and is generally stubborn in its course. The prognosis must vary with the likelihood of the removal of the cause.

URTICARIA PIGMENTOSA.—Under this name cases of an unusual form of disease have been described possessing features which entitle it to consideration in the present connection. It is characterized by the formation of pinkish, reddish, or yellowish wheals, similar to those encountered in ordinary urticaria, which incline to persist, and to be succeeded by yellowish, orange, greenish, or brownish stains, or pigmented spots. The skin in all cases is

highly sensitive and irritable, the least excitement occasioning an outbreak of the lesions, and intense itching and burning. Attacks occur at variable intervals, and the disease is usually chronic, the lesions lasting from several days to as many weeks. Where a new growth has taken place, the lesions, on the other hand, are permanent, as in a case under my observation. It is encountered in children, and in the reported cases first manifested itself early in infancy. It may continue for months or years. It may prove fatal.

The nature of the disease is obscure. Some observers regard it as a peculiar form of urticaria, while others, as Tilbury Fox and Thin, maintain that it is distinct from urticaria, and that it is to be viewed rather as a new growth.* There are undoubtedly two varieties of the disease, one of which is to be viewed as urticaria, the other as a new growth. Recognition of this fact will account for the discrepancy of writers in the reports of cases. In one case that I saw, the new growth development (which clinically bore some resemblance to xanthoma tuberosum) was pronounced. This is the form of the disease called by Tilbury Fox "xanthelasma-moidea." In two other cases that have come under my notice the urticarial element was pronounced, and the question of a new growth could scarcely have presented itself. The disease may be mistaken for the erythematous or papular syphiloderm, and for xanthoma. Cases have been recorded by Nettleship,† Marrant Baker,‡ Tilbury Fox,§ Barlow,|| Sangster,¶ Morrow,** Goodhart,†† Mackenzie,‡‡ and Cavafy.§§

* Thin examined microscopically the lesions in a case and found the disease to consist of a granulation cell-growth, not unlike that of scrofuloderma. Trans. of Clin. Soc., vol. ix.

† Brit. Med. Jour., Sept. 18, 1869.

‡ Trans. Lond. Clin. Soc., 1875.

§ Ibid., 1875. Fox describes the disease under the name of xanthelasma-moidea, on account of its resemblance to xanthelasma, or xanthoma, and gives a plate representing a case in his Atlas of Skin Diseases.

|| Trans. Lond. Clin. Soc., 1877.

¶ Lancet, May 11, 1878.

** Arch. of Derm., Jan. 1879.

†† Med. Times and Gaz., Feb. 1, 1879.

‡‡ Med. Times and Gaz., 1880, vol. i. p. 451.

§§ Lancet, 1880, vol. i. p. 739.

ECZEMA.

Syn., Tetter; *Germ.*, Eczem; *Fr.*, Eczéma.

ECZEMA IS AN INFLAMMATORY, ACUTE OR CHRONIC, NON-CONTAGIOUS DISEASE OF THE SKIN, CHARACTERIZED AT ITS COMMENCEMENT BY ERYTHEMA, PAPULES, VESICLES, OR PUSTULES, OR A COMBINATION OF THESE LESIONS, ACCOMPANIED BY MORE OR LESS INFILTRATION AND ITCHING, TERMINATING EITHER IN DISCHARGE WITH THE FORMATION OF CRUSTS OR IN DESQUAMATION.

Symptoms.—It will be noted that the term eczema is employed in a broad sense and is made to include a number of diverse lesions. Several of these forms of disease have until recently been viewed as distinct affections. With the light of modern pathology, however, we are now enabled to group them together as belonging to one process. As we shall presently see, they are but varieties and stages of one disease. Regarding, then, these varied manifestations in this manner, their study becomes simplified. Indeed, it is only by so interpreting the subject, it seems to me, that eczema can be at all comprehended.

The affection exhibits itself in various lesions. It is eminently a protean disease. At one time it starts as an erythema; later, perhaps, this erythema becomes a moist, excoriated patch, terminating finally in a thickened, dry, desquamative surface. At another time it commences in the form of vesicles or pustules, seated upon more or less inflamed bases, with a variable amount of swelling and heat; the vesicles soon burst, and there results a red, weeping surface, pouring forth a liquid, gummy discharge, which quickly dries into crusts. The character of this patch may now suddenly change, and instead of a weeping, excoriated surface there exists a dry, scaly, infiltrated, fissured area of skin, which continues until the disease is removed. Or, again, papules may first appear. These may remain as such throughout their course or may pass into other lesions, or they may be associated sooner or later with vesicles. Such is a brief outline of the changes which may, and frequently do, take place in eczema. There is no other affection of the skin in which the lesions, both primary and secondary, undergo so many and so sudden alterations; not infrequently we may observe several varieties of eczema manifesting themselves in

turn upon the same individual. This subject will be referred to more at length in the consideration of the varieties of the disease.

More or less infiltration of the tissues is present in every case of eczema. It is one of the most characteristic features of the disease. The exudation, whether fluid or plastic, is generally considerable, and in the majority of instances is excessive, giving rise either to discharge and subsequent crusting or to the deposition of plastic material. The presence or absence of discharge, that feature which for so long a time was regarded as a *sine qua non* of eczema, will depend entirely upon the lesions in which the process manifests itself. In the vesicular and pustular forms, especially the former, the amount of fluid exudation is usually great, and is followed by thickening as well as crust formation. On the other hand, in the erythematous and papular varieties no discharge takes place, and consequently no crusts appear. More or less desquamation, however, is present in these cases, varying in amount with the stage of the disease, and also with the locality attacked.

Itching, in varying degree, is a constant symptom of the affection. It varies in intensity from that which is simply annoying to that which is almost unendurable. Occasionally, it may be said rarely, cases of disease, apparently typical eczema as regards the eruption, especially of the hands, are encountered where the patient denies itching or other subjective symptom. At times the sensation is that of burning rather than itching; in other cases they occur together; more rarely pain is present, which sometimes exists as the most prominent symptom, the disease being known as neurotic eczema.

Eczema runs its course either as an acute affection lasting a few weeks and then disappearing not to return, or, as is much more usually the case, it assumes a chronic state, continuing with more or less variation for months, years, or a lifetime. As a rule, it inclines to settle in the skin and to remain there for an indefinite period.

It may appear as a limited eruption, in the form of variously sized and shaped, single or multiple patches, its usual mode of distribution, or it may show itself as a diffused disease, involving the greater part or in rare instances even the whole of the body. Unless occupying an extensive surface, it is seldom ushered in with any symptoms of constitutional disturbance.

The varieties of eczema are named according to the lesions which the disease assumes at its commencement.

ECZEMA ERYTHEMATOSUM.—The primary lesion here is a macule,—an erythematous spot or patch. The course of a typical case may be described as follows. The condition first noticed is an erythematous state of the skin, usually undefined in outline, and commonly fading imperceptibly into the surrounding healthy skin. It may be small or large; it may be the size of a small coin, as, for example, upon the nose, or it may be as large as the hand or much larger. There may be slight swelling present, varying with the locality, and with the amount of surface invaded. There is no fluid discharge or sign of moisture. Ordinarily, in the course of a few days, the patch is covered with a thin film of dry, exfoliating epidermis or scale; at times, through excoriation, the mucous layer is exposed. The color of the skin is usually pale or bright red; it also often has a slight yellowish tinge, at other times a violaceous hue. It may be uniformly diffused over the affected part, or, as frequently occurs, it may be mottled or in the form of patches or blotches. Upon the face, in particular, especially the forehead, considerable variation in color is apt to manifest itself; at one time it is pale or bright, at another time dull or violaceous.

The disease may either remain localized to a small area or it may invade a large surface. It inclines to spread. The process, as a rule, varies in intensity from time to time; it is apt to be better one day and worse the next, and better one week than another. It may even disappear wholly for a time and then show itself again. Its course is variable, and at times even capricious. It may pass off completely at the end of a few weeks, or, as is more likely to be the case, it may assume a chronic course, attended by considerable thickening of the tissues. It is exceedingly liable to relapse. The influence of external heat or of excitement, as a rule, aggravates the condition. A heavy meal, or indulgence in alcoholic drink, is likewise very apt to be followed by an exacerbation. The burning and itching sensations are in almost all cases marked, and generally constitute prominent symptoms.

Eczema erythematosum may remain as such until it finally disappears, or it may undergo various changes, as, for example, into a moist, weeping eczema, with more or less crusting. The locality

attacked often determines the form into which it is likely to pass; occurring where two surfaces naturally come into contact, as, for example, about the genitalia, eczema intertrigo commonly results. This form of the disease is also known as ECZEMA MUCOSUM. In the majority of instances, however, it terminates in desquamation, becoming eczema squamosum. Vesicles or pustules are rarely seen, the patch usually remaining in the erythematous or squamous state throughout its duration. It ordinarily shows itself about the region of the face,* particularly upon the forehead; it also occurs frequently upon the genitalia.

ECZEMA VESICULOSUM.—The affection usually appears in the following manner. There is a feeling of heat and irritation about the part for a short time preceding the eruption; then a diffused or punctate bright redness manifests itself, accompanied by itching and burning, which continues to increase until in a short time numerous, minute, pin-point to pin-head sized vesicles appear. They are either discrete or, as is more often the case, closely packed together; frequently they run into one another, becoming confluent, and making a patch. They grow more prominent from day to day, or even from hour to hour, until soon they become distended with a clear or opaque yellowish fluid. The tissues are more or less swollen, hot, bright red in color, and the itching usually so intense that the patient is unable to resist the impulse to scratch. Where the swelling is a marked feature, and the vesiculation comparatively insignificant, the condition is known as ECZEMA ŒDEMATOSUM, and bears some resemblance to erysipelas. The process is now at its height,† and thus far has run a rapid course. But the disease does not remain long in this condition; the vesicles soon rupture, either of their own accord or through scratching, the fluid spreading itself over the surface and at once drying into yellowish honey-like crusts. New crops of vesicles subsequently come out, or, on the other hand, the discharge exudes so rapidly from the skin that there is no time for vesiculation. The quantity of fluid exuded is often very great, at times running off in drops. Through maceration of the epidermis, and rubbing and scratching of the part, there soon results an excoriated, more or less red, weeping

* See my Atlas of Skin Diseases, Plate A.

† This stage of the disease is well portrayed in my Atlas of Skin Diseases, Plate T.

surface. The amount of crusting will depend upon circumstances, as, for example, the locality involved, exposure to the air, the removal or not of old crusts, etc. The disease may continue in this state for a few days, when the various symptoms will gradually subside; or, on the other hand, they may all become aggravated, the disease in this event passing into another and more lasting stage, which has received the name of *eczema rubrum*.

The typical vesicular *eczema* just described is met with frequently enough in one stage or another of its course; more often, however, associated with the vesicles we find also papules, papulovesicles, vesico-pustules, pustules, and other lesions. It is in these latter cases, and they are common, that the variable character of *eczema* is most manifest. The lesions are often so multiform, indeed, that it becomes a matter of difficulty to determine whether, for example, vesicles or pustules predominate. Itching is the most prominent subjective symptom; it is generally intense, and gives rise to an irresistible desire to scratch. After the vesicles have been opened, and the fluid allowed to escape, the itching subsides somewhat, and burning sensations are often complained of. With the advent of another crop of vesicles the itching returns.

Vesicular *eczema* may involve a small surface only, or it may occur extensively over various regions of the body. It frequently shows itself upon the face, in both children and adults; in the former it constitutes the *CRUSTA LACTEA* of old writers. It also shows itself often about the hands and fingers. The lesions show no tendency to group, and occur without regularity of distribution. They form about the openings of the hair-follicles and on other parts of the skin without preference.

ECZEMA PUSTULOSUM.—This variety, called also by some writers *ECZEMA IMPETIGINOSUM*, is closely allied to the preceding, with the difference that the lesions assume the form of pustules rather than of vesicles. They are formed in the same manner as the vesicles, which have been described. Usually the disease is accompanied by less swelling, heat, and itching. The pustules are usually considerably larger than the vesicles, and are, as a rule, firmer in consistence. They develop as pustules, or, as is often observed, they may become pustules from vesicles; again, both lesions may exist at the same time, side by side. A strict line cannot be drawn between the vesicles and pustules of *eczema*.

As in the case of the vesicles, the lesions burst, and are replaced by thick, bulky, light or dark greenish-yellow crusts, which may cover the skin completely. If the process continue, they may accumulate in quantity, causing much disfigurement. They desiccate quickly and become friable, finally falling off or crumbling away. Eczema pustulosum shows itself most frequently upon the scalp and face;* it is common in these regions in children and young people, more especially in the strumous and in those who are ill fed and improperly cared for. Upon the scalp it usually assumes a stubborn character. The pustules may appear here in great numbers, sometimes undermining the whole surface, and giving rise to a most distressing form of the disease.

ECZEMA PAPULOSUM.—This variety, known formerly as **LICHEN SIMPLEX**, is characterized by the appearance of papules rather than of vesicles or other lesions. Although long considered as a disease distinct from eczema, and termed lichen, it is now recognized as one of the varieties of eczema. Its eczematous nature was first pointed out by Hebra. It appears in the form of small, round or acuminated papules, varying in size from a small to a large pin-head. In color they are reddish; at times bright red, in other cases darker or violaceous. They may be either discrete or confluent, and may occur either in patches or in a disseminated manner over a considerable surface, without regularity of distribution. Ordinarily they begin as papules and continue throughout their course as such. At times, however, they commence as papules and pass on into other lesions, as vesicles; or they may be associated with vesicles, both lesions occurring at the same time. Thus, in papular eczema, while true papules predominate, imperfectly-formed papules, half-developed vesicles, or even typical vesicles may appear. It is this clinical fact which proves the identity of the process, and that the vesicular and papular varieties are but manifestations of one and the same disease. Where the papules are overcrowded they are apt to run together and form solid patches, which, if they be subjected to violent scratching or other irritation, may become abraded and result in eczema rubrum. Inasmuch, however, as the lesions are usually discrete, this seldom occurs.

* See Plate Y in my Atlas of Skin Diseases.

The papules are usually persistent; they may continue for some time without undergoing marked change, or they may disappear and be replaced by others. Where they aggregate in the form of patches, infiltration is usually extensive. Papular eczema attacks by preference the arms, trunk, and thighs, especially the flexor surfaces.* It is rarely observed on the face or on the hands and fingers. It may invade a limited region or the greater part of the body. It is one of the most obstinate varieties of the disease. The subjective symptoms are generally more violent than in the other varieties of eczema. The itching is often intolerable. Patients almost invariably scratch themselves severely, tearing the summits of the papules and causing them to bleed. Small blood crusts consequently may almost always be noticed here and there over regions which are accessible to the hands. Even the skin between the lesions is frequently severely scratched and excoriated.

Having described the varieties of eczema considered from the stand-point of the primary lesions, there remain still certain forms of the disease which, although not, strictly speaking, varieties, are important phases of the disease, and call for special description. The first to which attention will be directed has already been incidentally referred to under the heads of eczema erythematosum and vesiculosum, namely, ECZEMA MADIDANS, or ECZEMA RUBRUM. This must be regarded rather as a condition, resulting from previous morbid action, than as a variety of the disease. It is to be viewed as a variety only in a clinical sense. It may result either from eczema erythematosum, vesiculosum, pustulosum, or papulosum, as already indicated. It is characterized by a more or less reddish, weeping surface, accompanied by marked inflammatory symptoms. Serum usually exudes freely, and at once forms into crusts; blood likewise oozes from the lacerated and exposed corium, which, together with the serum, dries into thick, yellowish, greenish, or brownish crusts, often completely enveloping the region.† These crusts adhere closely and firmly to the part, and, unless detached by mechanical means, may remain there indefinitely, the disease continuing its course beneath the mass of effete matter. Eczema madidans, then, presents two appearances,—as it occurs with its

* See Plate X in my Atlas of Skin Diseases.

† See the face of a child, Plate O in my Atlas of Skin Diseases.

crust, and as it exists without this covering.* In the one case the skin itself is altogether obscured by a dirty yellowish or brownish crust; in the other the skin presents a bright or violaceous red, punctate, wounded surface, deprived in great part of its epidermis, and exuding a scanty or profuse, clear or opaque, syrupy, yellowish fluid. Sometimes this is streaked with blood.

Eczema madidans may occur upon any part of the body. It is most commonly seen upon the legs, particularly in elderly people, in the form of extensive patches, sometimes occupying the greater part or whole surface of the limb.† It is for the most part chronic in its nature, not only the skin but the deeper tissues also becoming more or less involved. Infiltration takes place in a marked degree, the skin becoming greatly thickened and hardened, feeling at times, in old cases, almost leathery. Eczemas in this condition may continue for years, not merely showing no disposition to spontaneous recovery, but, on the contrary, tending steadily to increase in their development. The flexures of the joints likewise are often the seat of *eczema madidans*; the groins, and the cleft between the nates, are also frequently affected, the condition in these instances usually arising out of an *eczema erythemosum*.

Another important clinical variety or form of eczema is that termed *ECZEMA SQUAMOSUM*. It is to be viewed as a stage of one or another of the four varieties of eczema; it may follow the erythematous, vesicular, pustular, or papular manifestations of the disease. As already pointed out, it generally succeeds *eczema erythemosum*. In other cases it shows itself at the termination of the vesicular and pustular varieties, in the form of dry, harsh, scaly patches. Papular eczema, when the lesions are confluent, or are seated so close together as to constitute a solid patch, may also result in squamous eczema; patches of this kind are often met with upon the extremities. When typical, it is characterized by variously sized and shaped, reddish patches. They are dry, and are more or less scaly. At times the scales constitute a prominent feature, in other instances they are scanty, the locality attacked determining to some extent the amount of desquamation.‡ Infil-

* See Plate H H in my Atlas of Skin Diseases.

† See Plate G G in my Atlas of Skin Diseases.

‡ See Plate I in my Atlas of Skin Diseases, representing a typical case of squamous eczema of the back of the neck.

tration is always present, and in the majority of cases, where the patches have existed for some time, is pronounced. When the skin is taken up between the fingers, it is felt to be thickened. This feature, of course, exists in all degrees; it may be slight, or, on the other hand, extensive, depending upon peculiarities of the case. Squamous eczéma may be, and is in many cases, merely an ephemeral stage of the disease, showing itself for a short time only previous to the disappearance of the affection. The term is commonly employed, however, to denote the chronic stage, which may continue without notable change for an indefinite period.

Other lesions are encountered in eczema, as they occur upon one part of the body or another, which, having peculiarities of a defined character, are worthy of mention.

Rhagades, or fissures, are observed not infrequently upon those regions which, by their natural conformation, are subject to constant motion. The various joints, particularly of the hands and fingers, are usually the seat of fissures or cracks of more or less severity; at times they are extensive, deep, bright red in color, showing the true skin, and so painful that motion is almost impossible. They usually occur about the normal furrows of the skin, but they may show themselves anywhere. They are produced for the most part by motion or strain upon the eczematously diseased tissues, which in many individuals incline readily to crack. They are found, more or less developed, in the erythematous, vesicular, and pustular varieties of eczema, the condition being termed ECZEMA FISSUM or RIMOSUM.

The so-called "chaps," as they take place about the hands, mouth, or other localities, may here be referred to. They are fissured lesions, often slight, which are liable to occur and to recur in skins which have a disposition to eczema, or in those which are abnormally tender. They indicate a debilitated or poorly-nourished skin, and are met with most frequently in strumous subjects. They may also be caused by the use of external irritants, as strong soap, the excessive use of water, acids, and similar substances; and by exposure to cold weather, and to hard manual labor.

In thickened, infiltrated, localized patches of eczema a peculiar warty, verrucous condition at times shows itself, the appearance being due to an hypertrophied state of the papillæ. The condition

may be very properly called *ECZEMA VERRUCOSUM* or *PAPILLOMATOSUM*, as suggested by Wilson; if simply hard, rather than wart-like, *ECZEMA SCLEROSUM*. The latter form is observed most frequently about the hands.

ECZEMA ACUTUM ET CHRONICUM.—A natural and at the same time important and proper division of eczema is that into acute and chronic. The line which separates the two conditions is one which may usually be drawn by means both of its clinical and of its pathological features. The division relates not so much to time as to certain pathological changes which occur during the course of the disease, and which it is necessary to bear in mind in viewing the subject of treatment. Eczema, as a rule, inclines to run a chronic course; there are, however, many exceptions, constituting examples of typical acute eczema, where the whole process completes itself in a brief period. So long as the general inflammatory symptoms are high, and the secondary changes insignificant, the disease may be said to be acute; when, however, the process has settled itself into a definite line of action, continually repeating itself, accompanied by secondary changes, the disease is to be considered as chronic. The terms are also at times applied to the length of time which the disease has existed.

Etiology.—Eczema is by far the commonest of all the diseases of the skin. It occurs more frequently in some countries than in others. In this country, among 24,980 cases of miscellaneous skin diseases collected by the committee of statistics of the American Dermatological Association, occurring in Boston, New York, Philadelphia, Baltimore, Chicago, and St. Louis, there were 8551 examples of eczema, or 34.23 per cent. In Philadelphia, according to my experience, it constitutes perhaps forty per cent. of the entire number of cutaneous diseases. In Boston, according to White,* the percentage is almost as great; out of 5000 cases of skin disease encountered in the out-patient department of the Massachusetts General Hospital, 2242 were eczema. In New York, Bulkley† makes the proportion less,—namely, about one-

* Bost. Med. and Surg. Jour., Jan. 27, 1876.

† Amer. Practitioner, May, 1875; also, Eczema and its Management, New York, 1881.

third of all the cases. Anderson,* in Glasgow, out of 10,000 cases in hospital practice encountered 2527 examples; while Hebra,† in Vienna, out of 29,535 cases met with in thirteen years in the General Hospital, records only 2195 cases, or not quite eight per cent. But at this hospital children rarely appear,—a point that must be taken into consideration. More recent reports, however, give 517 cases of eczema among 3217 cases of skin diseases, or somewhat over sixteen per cent., which is probably nearer the actual proportion. Thus it will be noted that the disease is more frequent in this country than abroad.

It attacks people in all spheres, the rich as well as the poor, and may appear at any period of life from infancy to old age. Males and females are affected in about like proportion, although extended statistics prove it to be somewhat more frequent in males. In certain cases it is hereditary, the term being used in the sense that a predisposition to its development is handed down from parent to child. On the other hand, in the vast majority of cases no hereditary taint is to be detected. All temperaments are by no means equally liable to the disease; individuals with light hair and florid complexion suffer more frequently than those with dark hair and skins. There are, moreover, certain persons so peculiarly constituted that their skins are ever ready to manifest signs of eczema upon the slightest provocation, whether this be in the form of internal or of external irritants. For example, it is well known that in certain people local irritants invariably tend to bring out eczema, while the same kind and amount of irritation upon others produce at most a simple dermatitis, which passes away completely with the removal of the cause.‡ In like manner, in these cases, internal derangements of various kinds are often sufficient to cause eczema to appear, while, as we are well aware, no amount of like irritation in another class of persons will occasion the least symptom of eczema. I would state, then, that there seems to be a certain inherent peculiarity of constitution in some, which, under favorable circumstances, encourages the appearance of the disease.

* The Lancet, Nov. 11, 1871.

† Neumann's Lehrbuch der Hautkrankheiten. Wien, 1876.

‡ See an able article discussing this question, entitled "Are eczema and psoriasis local diseases of the skin, or are they manifestations of constitutional disorders?" by Dr. Bulkley. Trans. Internat. Med. Cong., Phila., 1877.

The so-called catarrhal nature of the disease has been insisted on by some dermatologists, chief among whom Tilbury Fox may be mentioned. The not infrequent association of eczema with chronic bronchitis and asthma inclines us to the belief that in some cases a relationship undoubtedly exists.

CONSTITUTIONAL CAUSES.—Here are to be found many conditions which are capable of giving rise to eczema. They play a most important part in the production of the disease, and, having called it forth, exert a powerful influence in keeping up the process. Chief among the constitutional causes rank the various disorders of the digestive tract. Dyspepsia (the term being employed in its broadest sense), with its long train of symptoms, is to be regarded as one of the commonest causes. Constipation, irregularity in the action of the bowels, flatulence, dyspepsia of the stomach and intestine, and other similar states, may frequently be observed to be the cause of the eruption. Deficient excretion through the various excretories of the body is also to be regarded as a cause. In certain individuals the presence of an excess of uric acid and urates in the system is sufficient to produce and to keep up eczema. The association of gout and rheumatism with eczema has long been recognized by observers. Sugar and albumen in the urine, especially the former, are also sometimes met with in chronic eczema, especially in elderly persons of sedentary habits who partake largely of animal food. Without question, the presence of the gouty or rheumatic vice, in some subjects, strongly disposes to attacks of eczema.*

As causes of eczema, certain writers have insisted upon the following—it is to be confessed, somewhat unsatisfactory—explanations. Mr. Wilson, for example, considers that it is due to “constitutional or general debility,” which may present itself as “assimilative debility,” as “nutritive debility,” or as “nervous debility.” Other observers consider that “perverted innervation” is to be viewed as the chief cause; others, again, that it is due to the “strumous or scrofulous state.” Improper food, either as to quantity or quality, also acts as an exciting cause. This remark is applicable in the

* See interesting articles by Dr. Bulkley “On the relations of the urine to diseases of the skin,” *Arch. of Derm.*, Oct. 1875, and on the “Gouty state in diseases of the skin,” *Amer. Practitioner*, Nov. 1877.

ease of both adults and infants, but is especially true concerning the latter, where the continued use of unsuitable diet frequently leads to serious disturbance of the health and to eczema. In certain cases, pregnancy and the period of lactation possess a decided influence in calling forth the disease. In the same way, all causes which tend to lower the average degree of health may serve as generators of eczema. It is in this sense that debility, nervous exhaustion, excessive mental or bodily work, and kindred states, act with manifest force in producing the disease. Eczema is often dependent upon a chlorotic state, the disease clinging tenaciously to the patient until the general condition has become improved. Various kinds of internal irritation, such as ascarides or tæniæ in the bowel, may also sometimes determine an eczematous eruption.

Dentition may operate as an exciting cause, and may occasion the disease to appear in infants who are predisposed to it. It is to be viewed in the light of a cause, as in the case of any other source of irritation to the constitution. The process, as we know, is one which not infrequently creates considerable systemic disturbance. Vaccination likewise at times calls forth an outbreak of eczema, but this occurs, as a rule, only in those who have already a tendency to the affection. On the other hand, vaccination may act as a therapeutic agent and cure the disease. Injuries to nerves and neuralgias may also give rise to eczema. Its relations to psoriasis in some cases are curious: thus, we occasionally meet with instances where the two diseases coexist; also where subjects are liable to attacks of either disease, showing at one time eczema, at another psoriasis;* and, finally, where eczema follows psoriasis.† Eczema is not contagious. It cannot be acquired from being in contact with or from handling the discharge, although this may be so irritating or acrid as to cause a simple dermatitis to be set up.

LOCAL CAUSES.—These are numerous, and are worthy of careful investigation; they play a conspicuous part in the production of many eczemas, and give rise to the so-called artificial eczemas.

* See an article by Campbell, *Arch. of Derm.*, July, 1877.

† See Neumann, *Allg. Wien. Med. Zeitung*, Nrs. 1 und 2, 1877; also *Viertelj. für Derm. u. Syph.*, 1 und 2 Heft, 1877, p. 262.

They are all eutaneous irritants. The preparations of mercury, for example, are capable of giving rise to eczema in those predisposed to the disease, as is seen in the condition termed *ECZEMA MERCURIALE*, which occasionally results from the excessive employment of mercurial frictions. The form of eruption here does not differ materially from that provoked by other similar substances, as, for instance, croton oil, tincture of arnica, tincture of cantharides, mustard, antimonial ointment, sulphur, and turpentine, all of which may give rise to artificial eczema. Dye-stuffs, especially those containing aniline, may also be mentioned as at times occasioning the disease.

The effects resulting from contact with the poison-vine (*Rhus toxicodendron*) and poison-tree (*Rhus venenata*) are well known, and exhibit forcibly the virulent influence which certain vegetable substances are capable of exercising when brought into contact with sensitive skins. The condition produced by these poisons, while generally a simple multiform dermatitis, is sometimes an artificial eczema, which may be of an erythematous, vesicular, or pustular character. It is well recognized that certain persons are always attacked when they come in contact with these plants, while others are able to touch and handle them with impunity, the skin in the latter cases being altogether insensible to their deleterious influence. This observation demonstrates clearly the great difference which naturally exists in the degree of sensitiveness of skins, and aids in explaining the whole subject of artificial eruptions.*

Heat and cold likewise have a share in some cases in the production of eczema. The heat of the sun, upon parts exposed for some time to its action, may cause an eczematous eruption, which is expressed by the term *ECZEMA SOLARE*. Excessive perspiration, with elevation of temperature, occurring about the genitalia and other localities where the skin inclines to form folds, may also occasion abrasion of the epidermis, chafing, and eczema, called *ECZEMA INTERTRIGO*. Eczema may similarly follow the inflammatory disorder of the sweat glands known as miliaria, or prickly heat, when this latter affection is prolonged and subjected to exasperating agencies, as friction, irritants, etc.

* For further remarks, see Dermatitis.

In connection with this subject reference may be made to the influence of the seasons upon eczema. The disease is found to be of much more frequent occurrence in winter than in summer. Many examples of chronic eczema recover spontaneously during the summer season, only, however, as a rule, to reappear with the winter. Sudden changes in the weather, especially from warm to cold weather, always aggravate these eczemas; they are not infrequently observed to be controlled in a remarkable manner by the seasons.

Water may, under certain circumstances, provoke an eczema; it is seen at times following the inordinate use of baths, water dressings, fomentations, etc. Alkalies, and also acids, in one form or another, may also be alluded to as causes; while strong soaps, particularly potash soaps, are exceedingly deleterious to many skins, and may give rise to harshness, fissures, and eczema. It is in place here to make mention of the injurious effects often resulting from the improper use of *sapo viridis*, or common soft soap. This substance is, as we know, a most valuable remedy in the treatment of certain varieties and stages of eczema; but it is also a harsh irritant, capable of doing much mischief when injudiciously applied to the skin. Dermatitis and artificial eczema from its imprudent use are not rare.

Two other important sources of eczema remain to be noticed, namely, parasites and scratching. The animal parasites claim particular attention, the pediculus and the *sarcoptes scabiei* being most prominent. Pediculi, especially those of the head, give rise to much disease upon the scalp, and are to be regarded as the cause of a not inconsiderable amount of eczema capitis in children. Of a like character is the inflammation of the skin produced by the long-continued ravages of the itch mite; the condition here differs but slightly from eczema vesiculosum. Lastly, scratching plays a significant part in the production of artificial eczema, as seen in scabies and in pediculosis.

Pathology.—In considering the pathology of eczema, it is necessary to bear in mind that we have a highly inflammatory disease, which undergoes many rapid changes during its development. We must also remember that we have several varieties of the disease, as, for instance, eczema papulosum and eczema vesiculosum, each running a somewhat different pathological course. Finally,

it is important to separate the acute from the chronic stage in an investigation of the subject.

Eczema possesses the following points in connection with its pathological anatomy. There is, in the first place, hyperæmia or congestion of the skin, as shown by the redness which is present. The bloodvessels and capillaries are overloaded with blood; this may take place uniformly over the surface, as in the case of eczema erythematosum, or in points, as in eczema papulosum. The condition is always particularly marked about the follicles, as may readily be seen with the naked eye. The important pathological process which occurs in the disease is an exudation, which may be either of a fluid or of a plastic quality, or of all grades between the two. According as the disease assumes an erythematous, papular, vesicular, or pustular form will the changes present one picture or another. The anatomical changes which have been observed in the course of the disease afford interesting knowledge upon the subject. Neumann's* experiment upon the skin of the ear of a living rabbit, consisting of the irritation of healthy tissue by means of croton oil, shows the changes which take place in simple dermatitis, and, in all probability, also in idiopathic vesicular eczema. At first a rhythmical contraction of the vessels took place, they being at one moment distended and at the next empty, but becoming gradually more and more dilated, until stasis was observed. The skin, which in the normal state was transparent, became opaque, swollen, and hot, accompanied, after a few hours, by the appearance of numerous vesicles. Forty-eight hours afterwards the animal was killed, and the tissue found to be infiltrated with serous fluid and filled with a great quantity of cells.

The changes occurring in the papular and vesicular varieties have been carefully investigated by Biesiadecki,† as follows. The principal seat of disease is the papillary-layer. In circumscribed portions of the skin the papillæ are somewhat enlarged in breadth and in length, and are infiltrated with cells, and a clear, serous fluid. The connective-tissue corpuscles of the papillæ are remarkable for their size and succulence, and are increased in number.

* Loc. cit., p. 169.

† Beiträge zur phys. und path. Anat. der Haut. Sitzungsber. der k. Akad., Wien, Bd. lvi. p. 243, 1867.



The presence of a serous fluid in the tissues of the papillæ is made manifest by the compressed condition of the swollen connective-tissue fibres. The rete mucosum is observed to be particularly altered over the papillæ affected in this manner. Numerous spindle-shaped cells are seen prolonging themselves into the mucous layer, lying half in the papillæ and half in the deepest cells of the rete mucosum. They crowd the cells of the rete apart, and reach even to the horny layer. These cells often form a dense net-work in the rete between the papillæ, penetrating one another in all directions. Within this net-work are found somewhat swollen epithelial cells, whose protoplasm appears less marked. This circumscribed infiltration of the papillæ forms the papule of eczema. In the further course of this process a vesicle may be formed. This is produced by the new formation of cells within the papillæ, and the superficial cells of the mucous layer swelling up considerably, perhaps rupturing, so that the epidermis becomes raised. The cells in the middle of the mucous layer are more markedly swollen, or they may be indistinct, as if containing granular matter, the largest nuclei being scarcely recognizable. In cases of rapidly-developed eczema the connective-tissue cells are found entering the rete in greater numbers, and form a dense net-work. With the increased abundance of these cells there is at the same time a larger quantity of fluid developed in the papillæ, to such an extent at times as to raise the epidermis up in the form of bullæ. If the epidermis covering the vesicles be removed, the fluid oozes forth upon the surface of the mucous layer, constituting moist eczema.

The fluid which pours forth in vesicular eczema is not to be distinguished from ordinary serum; microscopically it offers no peculiarities. It is a clear, yellowish, syrupy fluid, of a sticky nature, and, as is well known, has the property of staining and stiffening linen. When exposed to the air it rapidly dries and forms crusts of a yellowish color.

The alterations which are found in chronic eczema are of another character, and differ somewhat according to the stage of the disease. The skin here is subacutely inflamed; is very much thickened, hardened, and infiltrated with cells. The papillæ are enlarged, often greatly so, and at times may be distinguished with the naked eye. The cell infiltration extends throughout the entire

eorium, even into the subcutaneous connective tissue. This infiltration occurs diffusely in the tissue of the eorium, and also about the vessels. Pigmentation may take place in the deep layers of the rete, and in the eorium, especially about the vessels. In a typical case of chronic eczema of the scrotum, Neumann* found the papillæ considerably larger than normal, and not only their bloodvessels, but also, the loops of the lymphatics, elongated, the latter being dilated in the form of a flask. Nowhere in the course of the lymphatics was there to be found any cell proliferation, such as existed about the adventitia of the bloodvessels, although the eorium was in part displaced by cell infiltration.

In considering the relation existing between the capillary congestion and the cell proliferation, Tilbury Fox† is inclined to the view that both cells and vessels play an important and somewhat independent part, in obedience to a nerve paresis, and that the most important element in the production of the disease is faulty innervation. Hebra‡ has expressed a similar opinion concerning impaired innervation, but does not speak of the influence of nerve irritation as causing cell proliferation. He remarks, in seeking an explanation of the occurrence of the disease, that, inasmuch as it may result from irritants and varicose veins, it is fair to suppose that the direct cause is a disturbance of the circulation, especially in the capillaries, causing capillary congestion. Whether this be the result of disease of the nerves or of the bloodvessels cannot be determined. He further believes that the congestion occasions such an excessive exudation of liquor sanguinis that it cannot be completely consumed in supplying loss, a certain superfluous quantity remaining over and infiltrating the cutaneous tissues, especially the epidermis.

Diagnosis.—Eczema being the most important of all the cutaneous diseases, a careful study of the subject of diagnosis becomes necessary,—the more so when the variety of the anatomical lesions which the process may assume is taken into consideration. No other disease appears in such varying forms. At one time an erythema, either with or without desquamation, followed, perhaps,

* Lehrbuch der Hautkrankheiten, p. 217. Wien, 1873.

† Skin Diseases, p. 173. Amer. ed., New York, 1873.

‡ On Diseases of the Skin, vol. ii. p. 140, New Syd. Soc. trans. Lond., 1868.

by a weeping surface and crusts ; in other cases, vesicles, passing rapidly into pustules ; again, papules, which, when aggregated, may break down into a patch, accompanied by moisture ; finally, one or all of these primary lesions in the same patient, presenting a complete picture of this wonderfully protean skin manifestation. Add to this the secondary changes which always occur, and it will be readily perceived how difficult the diagnosis of eczema may become. To understand thoroughly the affection, it should be viewed as a whole, when it will be noted that it presents certain characteristics, some of which are invariably at hand. These may be referred to.

A certain amount of cell infiltration is always present in eczema. It may be marked or only slight, according to the severity of the process. It may be detected by the thickening of the skin, which may be both seen with the eye and felt with the finger. Swelling and cedema also exist in all acute eczemas, and often in the more chronic cases. The patch is red and congested, the redness disappearing slowly beneath pressure, and returning in like manner. The exudation of fluid or plastic material is a constant symptom, and is observed in varying degrees.

In the majority of cases, fluid exudation, or moisture, has taken place at one stage or another of the disease. This symptom is peculiar, and is characterized as an oozing of serum, in varying quantity, which discharges more or less uniformly from the surface ; it is very properly termed weeping, watering, leeting, discharging, or running. No other disease has this symptom. It may be of the nature of a clear fluid, or puriform ; or it may be streaked with blood. The plastic exudation, on the other hand, constituting the papule or the patch of eczema, is more difficult of recognition, and may be mistaken for other forms of disease, to be presently referred to. Following discharge come crusts, and those of eczema cannot well be confounded with others. When the discharge has been copious, as is commonly the case, the crusts form rapidly and in quantity ; they are yellowish, greenish, or brownish in color, and adhere to a moist surface beneath. The amount of cleansing of course modifies the crusting, but it is frequently so abundant as to mask the skin.

Of the diagnostic subjective symptoms that of itching is the most characteristic. It is usually of an intense character, exceed-

ing that of other diseases. It is a constant symptom, never being altogether absent, although its degree may vary considerably. With the itching there is always an irresistible inclination to scratch. Burning sensations are often complained of in the acute stage, which, as a rule, soon give way to the more decided feeling of itching. Finally, it must not be forgotten that two or more varieties of the disease may be present at the same time upon one patient, offering a mixture of lesions in various stages of development.

The diseases with which *eczema* is liable to be confounded are the following :

SCARLATINA.—There may in certain cases be difficulty in distinguishing it from this disease; rarely, however, for the general symptoms of systemic disturbance in *scarlatina* are so marked as to be significant. There could be doubt only in those cases of acute *eczema* where the eruption is universal. A short period of observation would in such instances serve to decide the question.

ERYSIPELAS.—This is an affection with which it is much more likely to be confused, and which may at times resemble *eczema erythematosum* or *vesiculosum*, particularly when about the face. The points of difference, however, are numerous and patent. *Erysipelas* is an acute affection, commencing at a point and usually extending itself on the periphery as a creeping disease. The inflammation is a deep one, involving the subcutaneous tissues as well as the skin, and is attended with great heat, swelling, and oedema. The disease is, moreover, accompanied by symptoms of fever and general disturbance. The sensations are those of burning and of fulness. The skin is deep red, shining, and tense; there is no discharge, except from the bursting of bullæ, which are often present in the latter stage of the affection. This discharge is very different from that of *eczema*.

ERYTHEMA SIMPLEX.—*Eczema* can scarcely be mistaken for any of the simple erythemas, or, more properly speaking, hyperæmias, for in these disorders there is no inflammation, hyperæmia being the sole morbid condition. The characteristic features of *eczema* are wanting.

URTICARIA.—The peculiar form of this affection known as *urticaria papulosa* presents lesions looking much like *eczema papulosum*, especially in children, which fact has given rise to the term

lichen urticatus, a disease which, however, must be viewed rather as an urticaria. The diagnosis in these cases is difficult. As a rule, the urticarial element is marked.

HERPES.—In their early stages herpes zoster and eczema may bear resemblance, although the irregular distribution of the vesicles of eczema will usually serve to distinguish it from the peculiar symptom of grouping in herpes zoster. Eczema is never attended with the neuralgic pain which generally accompanies zoster,—a feature in itself often sufficient to prevent any confusion in diagnosis. Eczema vesiculosum is more apt to resemble other varieties of herpes, especially those forms occurring about the face and genitalia. These, however, run their course in a few days as simple and mild disorders.

PEMPHIGUS.—Eczema cannot be confounded with typical pemphigus vulgaris, for here the blebs are isolated and large and have a different history from the vesicles of eczema. There is, however, a variety of pemphigus, known as pemphigus foliaceus, which has certain features resembling eczema. It is, however, extremely rare, and, moreover, differs from eczema in its history, course, and symptoms.

SEBORRHŒA.—Squamous eczema bears many points of close resemblance to this affection. The two diseases often present similar appearances as they occur upon the scalp. In this region they may even at times exist together, the seborrhœa existing either as a primary or as a secondary disorder. In eczema the scales are larger, less abundant, less greasy, and drier than in seborrhœa. In eczema they are, moreover, usually seated upon a circumscribed patch, while in seborrhœa, as a rule, they cover the scalp uniformly. The skin in eczema is more or less red, inflamed, and thickened, and is usually markedly itchy; in seborrhœa it is often even paler than normal, and may or may not be itchy. Sometimes, however, it is hyperæmic, in which case the diagnosis is more difficult. The history of the two affections in most cases is sufficiently different to render the diagnosis clear and positive. They are both frequent affections.

PSORIASIS.—This also is a common disease, and is often confounded with eczema, the appearances frequently being so alike that it becomes a matter of difficulty to decide upon the case. Both diseases attack all parts of the body; both are prone to occur on

the scalp, where the most embarrassment in diagnosis is likely to arise. Typical eczema can never be mistaken for psoriasis, but old, infiltrated, inflammatory, scaly patches frequently look very much like psoriasis. The edges of patches of eczema usually fade away into the healthy tissue; in psoriasis, as a rule, they terminate abruptly. The scales upon eczematous patches are thin and scanty; in psoriasis they are abundant, and are observed to be larger, whitish or silvery, and imbricated. In eczema there will be usually some account of moisture at one stage or another of the patch; in psoriasis the process is always dry. The occurrence of the disease on other parts of the body will further serve to clear away any doubt, while the general history of the disease will also assist materially in arriving at a correct diagnosis.

LICHEN RUBER.—Eczema may be confounded with both varieties of the disease, more especially with lichen planus; the other variety, *acuminatus*, is exceedingly rare in this country. The distinctive features of eczema, however, should be remembered; they will prove sufficient to establish the diagnosis. The papules of lichen planus are flat, and have an irregular or angular base; those of eczema are acuminated or rounded, and have a rounded base. Those of eczema, as a rule, are bright red in color; those of lichen planus have a dull crimson hue, with a shining aspect, and are more or less scaly. The papules of eczema form quickly, and are apt to undergo change; those of lichen planus form slowly, and never exhibit any other form, remaining papules throughout their course. Lichen planus disappears slowly, and leaves marked brownish stains in the place of the papules; papular eczema leaves but little pigmentation. In eczema the general health is not seriously affected; in lichen ruber it may be greatly disturbed.

PTYRIASIS RUBRA.—This is even a rarer disease than lichen ruber, and presents symptoms which might readily be interpreted as eczema. It may be distinguished from eczema by its uniform redness; great masses of large, thin, papery, whitish, epidermic scales, which continually reproduce themselves; slight itching; burning heat; and, lastly, by the absence of marked infiltration and thickening of the skin, a symptom common in eczema. It undergoes but slight changes throughout its course.*

* For the diagnosis between eczema and the several varieties of dermatitis, some of them rare, the reader is referred to the subject of dermatitis.

TINEA CIRCINATA.—This affection is not infrequently confused with eczema, especially with the squamous variety. The course of the two diseases, however, is unlike, and should alone be enough to separate them. Eczema has no tendency to assume circular patches, or to produce a marginate or serpiginous course; tinea circinata, on the other hand, has.* In eczema there is no history of contagion; in tinea circinata the disease may often be traced to this source. The edges of patches of eczema seldom terminate abruptly; those of tinea circinata generally do. Eczema tends to run a chronic course; tinea circinata, as a rule, an acute one. At times, however, it pursues a slow and insidious course, and in these cases is difficult to diagnose from eczema. The itching in eczema is usually more marked and severe than in tinea circinata, except where the latter disease attacks the genito-crural region. Finally, the microscope reveals the existence of a fungus in the scales of tinea circinata.†

SYCOSIS.—Both varieties of this affection, parasitic and non-parasitic, especially the latter, bear considerable likeness to eczema of the beard.‡

TINEA FAVOSA.—The yellowish crusts of eczema often simulate those of favus, and mistakes in diagnosis may readily occur unless attention be given to diagnostic marks. The crusts of eczema pustulosum upon the body can scarcely be mistaken for favus. Upon the scalp, however, a common seat of both diseases, there is much more liability of falling into error.§

SCABIES.—This affection in its early stage possesses more features in common with eczema than with any other disease. The contagiousness of the disease will be one of the strongest arguments against the likelihood of the case being eczema. A history of direct contagion is usually to be found in scabies. Inflammation, papules, vesicles, pustules, and crusts are all at hand as in eczema, and these lesions therefore are of little assistance in arriving at the

* So-called "eczema marginatum" is regarded by me as ringworm, to which subject the reader is referred.

† Other points of differential diagnosis between tinea tonsurans and eczema of the scalp will be given in describing eczema of the head.

‡ The differential diagnosis will be found in the consideration of eczema of the beard.

§ The differential diagnosis of these diseases is given in connection with eczema capitis.

diagnosis. The presence of the sarcoptes, as proved by the burrow or by extraction of the mite with a needle, must of course at once settle the question. But the demonstration is not always practicable, for in old cases all signs of the burrows have been destroyed, and the intruder is no longer to be caught. The regions of the body attacked offer valuable hints for diagnosis. Eczema is rarely so diffused as scabies; nor does it show itself in preference so markedly about the hands and fingers, axillæ, abdomen, mammæ, nipples, penis, and buttocks, all favorite localities for the exhibition of scabies. In scabies which has existed for some time, the whole body will be seen to be generally involved, the face and especially the scalp, however, usually remaining free. Patches of disease are not formed in scabies, unless the process has been permitted to run on for a long time, when they may be produced by prolonged scratching. Excoriations and strong applications of one kind or another both contribute largely to mask the original lesions of scabies, and to render the condition similar to eczema. In cases of doubt, the diagnosis may be decided by treatment. If the disease be scabies, parasitocides will soon afford relief and subsidence of the more active symptoms; eczema, on the other hand, will, as a rule, not be materially improved by such treatment, and may be even aggravated.

ARTIFICIAL INFLAMMATIONS.—Various grades of disease, produced by means of cutaneous poisons, acids, alkalies, and similar substances, often cause true inflammation of the skin and subcutaneous tissues, which may present an appearance very much like acute eczema. The regions affected, the distribution of the eruption, the uniformity and peculiar character of the lesions, and the artificial look which always accompanies these diseases, generally afford an insight as to their real nature. If suspected, the history, course, and termination will serve to distinguish them from true eczema.

SYPHILIS.—Eczema of the scalp is more apt to be mistaken for syphilis than any other local variety; upon the body it can scarcely be confounded with syphilis. A certain form of syphilis occurring at times upon the scalp may look very much like ordinary eczema pustulosum with fissures; it will be found, however, upon close examination, to be syphilis of a superficial ulcerating form, covered by eczematous-looking crusts. It will generally have a disgusting

odor, which symptom alone will sometimes serve to distinguish it from eczema. In eczema it is important, in all cases, to remove crusts and other secondary matter before pronouncing diagnosis; error may be avoided by attention to this point. The other varieties of eczema, the papular and vesicular, cannot well be mistaken for syphilis. The subjective symptoms, especially itching, are, as a rule, absent in syphilis.

Treatment.—In the consideration of this portion of the subject the outlines only for treatment can be given. To enter upon the matter fully would carry the chapter beyond the space assigned to it. In the first place, it may be stated that eczema is a perfectly curable disease. For its relief two distinct methods of therapeutics are employed, one directing its force against the skin itself as the offending organ, trusting by this means alone to restore health to the part; the other endeavoring to remedy the disorder by the employment of internal or constitutional remedies, intended to act against the source of the disease. The plan which appears to me to be the correct one, and which in my experience has proved most satisfactory, is that which recognizes both local and constitutional remedies as being of almost equal value. I am confident, viewing the matter in a broad light, that this doctrine affords us the best results in practice. In some cases, of course, local treatment is the more valuable, and is to be mainly or entirely relied upon. In other cases, the same is true of internal treatment.

CONSTITUTIONAL TREATMENT.—Constitutional remedies, if judiciously prescribed, prove of decided benefit in the majority of cases. They are, however, not demanded in every case, and, unless indicated, are not to be recommended. Discrimination in this matter is to be exercised. The subject of diet must in the first place be referred to. During an attack of the disease it is important that the diet be suitable. This remark applies to many cases of chronic eczema almost as pertinently as to acute eczema. In those cases where the natural habit is full, the food should be plain. If there be any disturbance of the digestive tract, all those articles of food which are difficult of digestion—as, for example, pastry, cakes of all descriptions, gravies and sauces, pork, cabbage, pickles, cheese, beer, wine, etc.—are to be interdicted. Exercise and fresh air are sometimes beneficial, and not infrequently will

be found to be valuable adjuvants in the treatment. The state of the bowels is always to be noted. They should be open at least once a day. Dyspepsia, in any form, should receive prompt attention, and every means be employed to remedy the condition. Certain eczemas are both brought on and kept up by this state. The condition of the kidneys should be investigated. Diuretics are frequently of service.

Having mentioned in a general way a few of the more prominent points for treatment, the various remedies which are found to be of service may be spoken of. Laxatives are of value in many cases, particularly in the highly inflammatory varieties of the disease. Saline aperients especially are to be recommended; among these the sulphate of magnesium occupies a conspicuous position. It may be combined to advantage with iron, as in the following prescription:

R Magnesii Sulphatis, $\mathfrak{z}\text{i}$;
 Ferri Sulphatis, gr. iv;
 Aquæ, $\mathfrak{f}\mathfrak{z}\text{iv}$.

M.—Sig. Tablespoonful,
 with a gobletful of water, half an hour before breakfast.

A similar formula containing sulphuric acid, mentioned in considering acne, is likewise very valuable. Rochelle salt, cream of tartar, and the various other aperient salts are also useful. Another useful tonic aperient, recommended by Anderson, especially serviceable where the bowels are easily moved, may be referred to:

R Sodii Phosphatis, $\mathfrak{z}\text{i}$;
 Acidi Phosphorici dil., $\mathfrak{f}\mathfrak{z}\text{v}$;
 Syr. Zingiberis, $\mathfrak{f}\mathfrak{z}\text{i}$, $\mathfrak{z}\text{iii}$;
 Inf. Gentianæ Comp., $\mathfrak{f}\mathfrak{z}\text{vi}$.

M.—Sig. Tablespoonful,
 in a large wineglassful of water, thrice daily.

The laxative mineral spring waters, as, for example, the Hathorn and Geyser springs of Saratoga, Ofner Rakoczy, Hunyadi János, and Friedrichshall waters, are also beneficial in many cases. In infantile eczema, in those instances where the bowels are irregular, good will often be obtained from the employment of syrup of rhubarb, alone or with magnesia, in repeated small doses.

Where there is a coated tongue, with heavy breath, light-colored

evacuations, and constipation, small doses of calomel may sometimes be administered with good result. At the commencement of an acute attack of eczema, cases not infrequently require remedies directed against disorders of the stomach, bowels, and secretions. Derangements of this character must first be rectified, after which other remedies may be prescribed.

Eczema occurring in old persons, especially in those of a gouty or rheumatic disposition, or in those who are *bon-vivants*, may often be successfully treated with diuretics and alkalies, as the acetate and carbonate of potassium, in full doses, and liquor potassæ or the alkaline natural spring waters. In some cases wine of colchicum may be added with advantage to the mixture. Where a stimulant is required, the carbonate of ammonium will be found serviceable, as in the following formula given by Anderson:

R Ammonii Carb., ʒiiss;
 Liq. Potass. Arsenitis, fʒi;
 Syr. Zingiberis, fʒii;
 Inf. Cascarillæ, fʒvi.

M.—Sig. One tablespoonful,
 with a large wineglassful of water, thrice daily.

If the patient possess a debilitated constitution, manifesting signs of imperfect nutrition or the so-called scrofulous disposition, cod-liver oil will prove a valuable remedy. It is of service in many cases of eczema, and particularly in children. The preparations of iron are also to be recommended; the syrup of the iodide, the tincture of the chloride, and the wine being especially useful. Quinine and strychnine, and the various bitter tonics, are also valuable adjuvants to treatment, and may be prescribed as they may seem indicated. Arsenic is of unquestionable benefit in many cases, but, as I have remarked elsewhere (see Part I., Treatment), it is important to select the case as well as the time for its administration. If given to examples of eczema indiscriminately, it will prove of more injury than benefit. It is noted not infrequently in practice that the disease is aggravated by the remedy. In no cutaneous disease is more discretion called for in the employment of arsenic than in eczema. It should never be prescribed if there is any disorder of the digestive system. Nor should it ever be given in the acute stage of the disease. It is

likely to do at this time more harm than good. It is found to be of especial value in the chronic papular form and in the squamous stage of the affection. Tar has in some cases been used internally with benefit in the squamous variety of the disease, especially in chronic cases. Sulphur spring waters, of which there are great numbers in our country, also not infrequently prove serviceable.

LOCAL TREATMENT.—For washing purposes, ordinary water may be employed; but in those cases where the skin is delicate, distilled water or one of the mucilaginous waters, made from bran or flour, should be substituted. Ablutions may be used either hot or cold, as may be agreeable to the patient. Too frequent washings or general baths are to be avoided; they have a tendency to macerate the already morbid epidermis. For cleansing purposes both the soda and potash soaps are made use of. In the majority of instances ordinary castile soap suffices; but where the crusts are firmly adherent to the skin, or exist in masses, the potash soap may be resorted to.

The treatment of eczema by means of local remedies is of great importance, and demands attentive consideration. Many cases may be relieved by external means alone. External treatment, of one kind or another, is always called for. There are no cases in which it may not be used with advantage. It is a matter almost essential to successful treatment that the part affected be seen by the physician, for it is in the first place to be determined whether the disease is acute or chronic, whether the process is in its most active stage or is subsiding. The variety of the disease next presents itself for consideration; the primary lesions are to be sought for and examined, and the presence of erythema, papules, vesicles, or pustules, or the combination of these lesions, established. The stage in which the affection exists is to be noted. The amount of cutaneous disturbance, heat, redness, swelling, œdema, and other abnormal phenomena, are all to be noted, as well as the condition of the epidermis, whether intact or lacerated. The character of the crusts and scales is of significance, and the presence or absence of fissures should be observed. A question of moment, moreover, to be ascertained before instituting treatment, is the extent of surface involved; the whole body may be affected, or there may be only a single small or large patch. The region attacked must also be taken into account. Finally, the duration

of the disease, its general history as stated by the patient, and, in particular, whether a first attack or a relapse, are all matters of consequence.

In almost all cases of eczema there are present certain secondary products requiring immediate removal. These consist of crusts, scales, and extraneous matter, which have been allowed to collect upon the surface. They are to be removed before active remedies can be advantageously applied. Crusts, if extensive, are to be treated first with oily preparations until saturated and loosened, or they may at once be acted upon by water and soap or other alkaline washes. The thorough cleansing of the part is a point of importance, and, unless insisted upon by the physician, will rarely be properly performed by the patient or attendant. Not uncommonly, repeated applications of oil, followed by abundance of soap and water, are required to secure the desired end. Scales are removed without difficulty by the same means. Water and soap have thus far been alluded to only as means for cleansing the skin. Their uses as curative agents will be presently referred to.

ACUTE ECZEMA.—Caution is to be observed in prescribing for the acute eczemas. Remedies which are well tolerated at a later stage of the disease will, as a rule, now be found to be too stimulating. Whatever the remedy applied, it should be at first used over a small surface, in order to ascertain whether the effect be beneficial or otherwise. Among the many local sedatives which from time to time have been recommended for the early stages of eczema, with a view of relieving the inflammatory symptoms and the itching and burning sensations, I shall mention those only which are of most value. It will, however, be borne in mind that a preparation which has been of service in one case will not necessarily afford relief in another case, bearing even, it may be, the same general features; peculiarities of skin have much to answer for. If, therefore, one remedy do not succeed, another must be tried; and here I would remark that it is often extremely difficult to decide whether this or that prescription is best suited to the case at hand. The patient soon determines this question, however, by the amount of ease obtained. This is the chief end to which treatment in this stage of the affection is directed.

In acute vesicular or erythematous eczema but little soap or water should be employed; the parts should seldom be washed, for

in the majority of instances water irritates the skin. In the place of washing, the surface may be powdered from time to time with a dusting powder composed of starch and small quantities of oxide of zinc and powdered camphor:

R Pulv. Amyli, \mathfrak{zvi} ;
 Pulv. Zinci Oxidi, \mathfrak{ziss} ;
 Pulv. Camphoræ, \mathfrak{zss} .
 M.—Sig. Dusting powder.

Powders of this description may also be made with lycopodium, French chalk, tale, carbonate of zinc, and carbonate of magnesium, in varying proportions, with or without starch. Instead of powders, lotions may be employed. I am in the habit of treating many cases of acute vesicular eczema with lotio nigra and oxide of zinc ointment, according to the following plan, suggested to me by Dr. J. C. White. The affected part is to be bathed with the lotion, full strength or diluted with equal parts of lime-water, applied by means of a sponge or a piece of cloth, for ten or fifteen minutes at a time, and at intervals of a few hours or longer; the sediment should be permitted to remain on the skin. After the application, oxide of zinc ointment is to be rubbed gently over the part. As a rule, the itching and burning are relieved at once, and the disease is often arrested in its course. A lotion consisting of lead-water, eight ounces; glycerine, two drachms, will be found useful. Carbolic acid, a drachm, or a drachm and a half; glycerine, four drachms; distilled water, a pint, can also be recommended: the strength may be increased or diminished according to the effect produced. To this four or six fluidrachms of alcohol to the pint may often be advantageously added. Dilute hydrocyanic acid, a few drachms to the pint, is also a sedative of some value. A saturated solution of boracic acid will likewise be found a useful remedy.

The following, prized by Tilbury Fox, may also be used: half an ounce of finely levigated (white) calamine powder; two drachms of glycerine; two drachms of oxide of zinc; and six ounces of rose-water. It should be applied frequently, by means of a sponge, allowing the sediment to remain upon the skin. A like lotion is composed of oxide of zinc, three drachms; glycerine, one drachm; lime-water, eight ounces. To this may sometimes be added with

advantage a drachm or two of the "liquor pieis alkalinus," or a few drachms of alcohol. The following mixture, much used by Mr. Startin, may also be given :

℞ Pulv. Calaminæ, ℥i;
 Cretæ Præparatæ, ℥i;
 Acidi Hydrocyanici dil., f℥ss;
 Glycerinæ, f℥ii;
 Liq. Calcis, f℥iii;
 Aq. Sambuci, f℥ivss.
 M. et ft. lotio.

The fluid extract of *grindelia robusta* is another good remedy, used as a lotion, in the strength of a drachm or two to from four to eight ounces of water. It should be used, however, cautiously. A lotion composed of two drachms of the "liquor carbonis detergens,"* one drachm of glycerine, and four ounces of rose-water, will be found suitable to many cases. I have moreover used with benefit in diffused vesico-papular eczema a lotion of thymol, ten or fifteen grains; glycerine, two drachms; alcohol, one ounce; water, seven ounces.

Weak alkaline lotions, as, for example, one drachm of bicarbonate of sodium or half a drachm of borax to eight ounces of water, may also be tried. Cloths steeped in hot water, as hot as can be borne, and wrung out and applied to the parts, at times afford temporary relief from the itching.

In many cases, however, ointments answer better than lotions. The oxide of zinc ointment is a well-known and excellent preparation, admirably adapted for many cases, and may be employed either alone or with other remedies. If it be benzoated, only a very small quantity of benzoin should be used. To make it more sedative, a drachm of spirit of camphor may be added to the ounce, as suggested by Wilson. Oleate of zinc, in the form of an ointment, as recommended by Crocker, is also a useful preparation.† It may be prescribed with three or four parts of petroleum

* An alcoholic solution of coal tar. It is prepared by Wright & Co., of London; also by L. Wolff, of Philadelphia.

† Dr. Crocker gives the following directions for making the oleate of zinc. Take one part of oxide of zinc and eight parts of oleic acid; stir together; allow to stand two hours; heat until dissolved. On cooling, a yellowish-

ointment, olive oil, or lard. The following formula is one which I frequently use :

℞ Zinci Oleatis, ℥iss ;
 Adipis Benzoati, ℥iii ;
 Vaseline., ℥iv ;
 Bals. Peruv., gr. v.
 M. Ft. ungt.

The oleate and subnitrate of bismuth are also serviceable in the form of an ointment, of similar strength. Camphor may also be employed in the form of an ointment, alone or with oxide of zinc and glycerine. The appended formula makes an acceptable ointment which may be used in the early stage of vesiculation :

℞ Pulv. Camphoræ, ℥i ;
 Pulv. Zinci Oxidi, ℥ii ;
 Glycerinæ, f℥ss ;
 Adipis Benzoati, ℥vi.
 M. Ft. ungt.

McCall Anderson has given the following formula for a soothing ointment, useful in many conditions :

℞ Bismuthi Oxidi, gr. xv ;
 Acidi Oleici, ℥ii ;
 Cereæ Albæ, ℥iss ;
 Vaseline., ℥ivss ;
 Ol. Rosæ, ℥i.
 M. Ft. ungt.

Oxide of zinc may be substituted for the oxide of bismuth.

white hard mass results, which may be variously made into an ointment. (Brit. Med. Jour., Oct. 26, 1878.) Mr. L. Wolff, of Philadelphia, who has supplied me with a superior oleate of zinc, writes as follows concerning its manufacture. "A true zinc oleate is best made by double decomposition of sodium oleate with zinc sulphate. The sodium oleate can be made by saturation of oleic acid with a solution of potassium hydrate and precipitation therefrom of the sodium oleate by sodium chloride. It is then expressed and dissolved in about eight times its weight of boiling water, and then the zinc oleate precipitated with a saturated solution of zinc sulphate. This precipitate is well washed with hot water, expressed, and reduced to an impalpable powder. For ordinary purposes zinc oleo-palmitate will answer. It is made by saponifying oil of sweet almond, dissolving the sodium oleo-palmitate so formed, and precipitating it in the aforesaid manner. Zinc oleate should be a white powder, of an unctuous touch, and perfectly soluble in warm oils or fats."

Diachylon ointment, made according to the formula of Hebra, is a very useful preparation. It is most effective when spread upon cloths and applied closely to the skin by means of bandages. It is prepared as follows:

R Olei Olivæ Opt., f $\overline{3}$ xv;
 Lithargyri, $\overline{3}$ iii, $\overline{3}$ vi;
 Aquæ, q. s.
 Coque. M. Ft. ungt.*

An elegant ointment may also be made according to the following formula of Mr. Moritz Eisner: Dry pure oxide of lead, one part; distilled water, one part; olive oil, eight parts; oil of rose, one drop to the ounce. Rub the oxide with water, add the oil, and heat on a water-bath to almost the boiling point until the oxide of lead has thoroughly combined with the oil, then cool with constant stirring.

A similar ointment may be prepared with one part of oil of sweet almond to two parts of lead plaster, as suggested by R. W. Taylor. Equal parts of lead plaster and petroleum ointment, as proposed by Piffard, also constitute an elegant ointment, which will be found useful.† Olive oil, equal parts of olive oil and lime-water, oil of sweet almond, and dilute glycerine may also be used as soothing dressings; likewise cold cream, cucumber ointment, and glycerole of starch.

In *eczema papulosum* the inflammation is not diffuse, as in the vesicular and erythematous varieties, but is circumscribed, the

* The following directions are necessary. The oil is to be mixed with a pint of water, and heated by means of a steam-bath to boiling, the finely-powdered litharge being sifted in and stirred continually; the boiling is to be kept up until the minute particles of litharge have entirely disappeared. During the cooking process a few ounces more of water are to be added from time to time, so that when completed water still remains in the vessel. The mixture is to be stirred until cool. It should be of a yellowish color and of the consistence of butter. The best olive oil and the finest litharge should be employed. In addition to the method given for its preparation, it may also be made with four parts of diachylon plaster and two or three parts of olive oil, the two substances being melted, and stirred until cool. The proportion of the oil necessary to produce a firm ointment will vary with the consistence of the plaster. Messrs. McKelway, Remington, Eisner, and Wolff, apothecaries, have furnished me, from time to time, with a satisfactory preparation.

† In both of these ointments the proportions must vary with the seasons.

papules being usually discrete. The inflammation, consequently, is of quite a different character, and pursues, as a rule, a more chronic course. Soothing applications are of little benefit here; more stimulating remedies, as the various so-called antipruritics used in the chronic stage of the disease, will be found of more service than bland preparations. Carbolic acid, as a lotion, is the most valuable remedy which we possess for papular eczema. The formula already given will be found suitable for many cases. Thymol, a few grains to the ounce of alcohol and water, is also useful. The following may likewise be given: "liquor carbonis detergens," three or four fluidrachms; glycerine, two fluidrachms; rose-water, five fluidounces. The "liquor picis alkalinus" diluted with water and glycerine, half a drachm or a drachm to the ounce, is also frequently serviceable. Lotions are much to be preferred over ointments for the treatment of this variety of the disease.

It need scarcely be remarked that it is impossible to draw the line definitely between acute and chronic eczema,—to state exactly when the former passes into the latter. In practice, however, it is found that, as a rule, the acute stage is brief, lasting usually from a few days to a fortnight. In the selection of remedies the physician must be guided rather by the pathological changes which have taken place than by the length of time the disease has existed. Some of the remedies to be referred to presently in speaking of the local treatment of chronic eczema may at times be used with benefit early in the course of the disease. I shall, however, refer to this subject again in considering the treatment of the disease as it attacks particular regions of the body.

CHRONIC ECZEMA.—After a few days or weeks, the acute process will, in most instances, have subsided to a great extent, and other remedies will be found more serviceable. Crusts should never be permitted to form; they should be removed by the means already indicated. In some cases the treatment just referred to for the acute stage serves also for later stages; more stimulating applications, however, are usually required.

Carbolic acid, in varying strength, here, as in the acute stage, is one of our most useful remedies; it may be employed in the form either of lotion or of ointment. In the proportion of ten or fifteen minims to the ounce of ointment it will be found serviceable

in both vesicular and erythematous eczema; it may be combined advantageously with the benzoated oxide of zinc ointment, and also with the oleate of zinc ointment. It is a valuable antipruritic remedy, and is one of the few substances which may be relied upon. In this connection thymol, recommended by Crocker,* in the form of an ointment or lotion, in the strength of from five to ten grains to the ounce, may also be mentioned. Somewhat similar in effect to carbolic acid are the preparations of tar, which are the most serviceable of all external remedies. To obtain good results they must be handled with care: unless used at the proper time and in suitable strength, they serve only to irritate, and when this occurs they are to be abandoned at once. Tar is of most benefit when the disease has reached the chronic stage. It is never to be applied in the very acute stage. If there be much inflammation, swelling, and œdema, it likewise should be withheld. The more chronic the condition, the more likelihood is there of its being tolerated. The mode of application, and the strength, are to be determined as the disease is upon one part of the body or another. Ointments of varying proportions are the most suitable means of applying it; for, in addition to its stimulating properties, an emollient effect is to be obtained. The ointment should not be too strong; from one to two drachms of the tar to the ounce are usually sufficient. The two forms of tar commonly used are *pix liquida* and *oleum cadinum*. They may be applied in the same manner, and have a similar effect upon the skin.

R. Olei Cadini, ℥iiss;
 Cerati Simplicis, ℥i;
 Ol. Amygdal. Amar., gtt. x.
 M. Ft. ungt.

This constitutes one of the most elegant of the tarry ointments. Half a drachm of the "*liquor picis alkalinus*," or a drachm of the "*liquor carbonis detergens*," to the ounce of ointment, will also be found serviceable. Fluid preparations are better adapted to the scalp than ointments. Thus, tar is sometimes employed with excellent result upon the scalp combined with alcohol, as in the appended prescription:

* Brit. Med. Jour., Feb. 16, 1878.

℞ Picis Liquidæ, fʒi;
 Glycerinæ, fʒi;
 Alcoholis, fʒvi;
 Ol Amygdal. Amar., gtt. xv.
 M.—Sig. To be rubbed firmly into the skin.

In whatever way it is employed, the part should be well rubbed with it twice daily by means of a piece of flannel rag. The ointment should not merely be smeared over the surface, but firmly rubbed in for ten or fifteen minutes. A small quantity should be used for each application, which should be worked into the skin until it has been quite consumed. The same directions apply to the fluid preparations. Tar is also advantageously combined with soap in the treatment of eczema. In the thick, leathery patches of chronic disease, equal parts of alcohol, sapo viridis, and pix liquida may be applied in the same way as the other preparations mentioned. To produce a stronger impression, potassa may be used in place of the soap, in the strength of from five to fifteen grains to each ounce of the mixture. Dr. Bulkley has given to the profession a valuable alkaline tarry preparation, which possesses the advantage over the plain tar in that it combines with water. The following is the formula:

℞ Picis Liquidæ, fʒii;
 Potassæ Causticæ, ʒi;
 Aquæ Destillatæ, fʒv.

M.*—Sig. "Liquor Picis Alkalinus." To be used diluted.

It may be used in the form of a lotion or with ointment. As a lotion, it is to be diluted with water,—from one to four or more drachms to the pint, according to the state of the skin and the effect desired. Care should be observed not to make the mixture too strong at first. In infiltrated, localized patches it can, of course, be employed much stronger, as, for example, one part to five or ten parts of water, followed by the use of some ointment. It may also be combined with ointment, from one to two drachms to the ounce. It is similar in its composition, though stronger, to the French preparation known as "gondron de Guyot," which may also be recommended.

* The potassa is to be dissolved in the water, and gradually added to the tar with rubbing in a mortar.

Various soaps are employed in the treatment of eczema. Common hard or soda soap, of which the variety known as castile is the type, may be used for purposes of ordinary cleansing, but to obtain stronger detergent effects the potash soaps are brought into requisition, and they perform an important part in the handling of certain eczemas. It must be remembered that all soaps are more or less alkaline, as they are hard or soft, and according to their quality, and that unless ordered judiciously they may be productive of mischief. This remark applies particularly to the strong potash soaps known under the names of *sapo mollis*, *sapo viridis*, black soap, brown soap, and soft soap, which contain a certain amount of free alkali. *Sapo viridis* has numerous uses in eczema. It may be employed alone, or with alcohol in the form of an alcoholic solution. (See p. 125.) It is an indispensable detergent agent, and may frequently be applied to cleanse patches of their crusts and scales previous to the use of other remedies.*

It is in the condition which has been described under the name of *eczema rubrum* that *sapo viridis* is found of greatest value.† It is in these cases employed systematically and in conjunction with an ointment. The more localized the disease, the better are the chances for success; in fact, it may be stated that, as a rule, this plan of treatment is to be adopted only in cases where the disease is confined to one or several patches. Where the eczema is diffused, and is upon various parts of the body, other methods answer better. In the frequent, chronic eczemas of the legs, it is the treatment *par excellence*. It may generally be relied upon in these cases when other remedies have failed. It is also to be directed in certain other local forms, as, for example, in infiltrated eczemas of the hands and arms, in chronic eczemas of the face, and, indeed, in all cases where the affection is localized upon a particular region.

The treatment consists in the application of the soap, followed

* In order to secure uniform results from the use of the soap, it is well to make use always of an article which is known to possess a definite strength. That obtained from Duvernois, Stuttgart, and from Bassermann and Herschel, Mannheim, Germany, is the most reliable with which I am acquainted. It is manufactured on a large scale at Worms. It is imported by Messrs. McKelway, Remington, and Wolff, of this city.

† To Hebra belongs the honor of having been the first to institute the method of treatment about to be described. To have it prove successful it is essential that the instructions for its performance be faithfully carried out.

immediately by the use of an oily ointment. Soap applied alone, in any form of eczema, acts as a mild caustic and as an irritant, and, as a rule, tends only to increase the disease. This is a point never to be lost sight of; much damage is often inflicted by the indiscriminate and too free use of strong soap. The ointment used in preference by Professor Hebra, and the one which is unquestionably the best, is the diachylon ointment already spoken of. The accompanying instructions are to be adhered to. A lump of the soap, the size of a small nut, is smeared upon a piece of wet flannel; this is to be applied directly to the patch of disease, and rubbed firmly and with moderate pressure upon the skin until all traces of the soap have disappeared. The piece of flannel may now be dipped into warm water and again applied in the same manner to the part, when an abundant lather will be formed. More water from time to time may be added, until copious suds cover the skin, when the diseased surface is thoroughly washed off, freed from all signs of soap, and carefully dried. The rubbing should be performed with a certain amount of force, to be regulated by the amount of infiltration, the region affected, and the sensibility of the skin. The time occupied in the process also must be governed by the effect produced; in slight cases five or ten minutes may prove sufficient, while in thick infiltrations, especially upon insensible regions of the body, twenty or thirty minutes may be advantageously expended at each operation. The first application should always be somewhat moderate, that too great a destruction of epidermis be not produced, thereby causing soreness. The sensations of the patient will, however, always serve as a guide upon this point. The application is not painful, as might be supposed, but, on the contrary, is usually agreeable, destroying the itching. The part immediately after the washing presents a red appearance, the skin being clean, tense, and shining. Here and there minute puncta may often be seen, from which clear serum oozes out in pin-point drops.

The part is now ready for the ointment, which should be prepared before the washing is begun, so that no time may be lost in applying it. The ointment is to be spread upon strips or pieces of soft, flexible muslin which have been cut to the size of the patch or extent of diseased surface. It is not well to make one large piece cover the whole, but is preferable to have several

pieces, in order that they may be better adapted to the surface. The ointment should be spread upon the rags as thick as the back of an ordinary table-knife. The part is now to be enveloped with these cloths in a neat manner, so that no folds or wrinkles may occur. Finally, it should have outside cloths applied, to prevent the oil from oozing through, and be bound down by means of a bandage. This is also a matter of moment, for its proper application contributes materially to the success of the treatment. It is essential that the ointment be brought into close contact with the skin, and that it be kept in this position. The patient may be permitted to go about as usual. The entire operation is to be repeated in the same manner twice daily. Usually improvement will be noticed at once. The patient will obtain relief from the itching at the first rubbing with the soap, and decided comfort after the ointment has been on for a short time.

In extensive and old patches of eczema it is at times necessary to have recourse to a more powerful caustic than the *sapo viridis*, in which case a solution in water of potassa may be applied. The strength may vary from ten grains to half a drachm or even a drachm to the ounce; but extreme caution is necessary in the use of such strong remedies, which should in every case be employed by the physician himself. The stronger the application, the less often should it be repeated; once every other day, or twice, or even once a week, will in most cases be sufficient. The effect of the caustic in these cases should be moderated by cold-water cloths and compresses, after which the *unguentum diachyli* may be used as described.

There are numerous other remedies and modes of treatment for the chronic stage of eczema, some of which are of great value and may here be referred to. The mercurial preparations occupy the first place in the list, and will be found exceedingly useful in many cases, particularly where the disease is confined to a small area without tendency to spread. Calomel is without question the most valuable, in the strength of half a drachm or a drachm to the ounce. The red oxide of mercury, varying in strength from five to twenty grains to the ounce, and ammoniated mercury, from twenty to forty grains to the ounce, are also of value. The latter is less severe in its action than the red oxide, and may often be prescribed with good result in the pustular eczemas of children.

The other mercurials, as the corrosive chloride, red iodide, black oxide, nitrate, and bisulphuret, may also be used. It must be remembered that there is a slight risk of salivation, even when applied to small surfaces, and that occasionally persons are met with who are extremely susceptible. Sulphur in the form of an ointment, from one to three drachms to the ounce of vaseline, at times acts very beneficially. Boracic and salicylic acids are also useful. Boracic acid ointment, sixty or eighty grains to the ounce, will be found especially useful in mild cases of erythematous eczema. Where ointments are not tolerated, a saturated solution of boracic acid may often be used in the same cases with benefit.

The glycerole of the subacetate of lead, brought forward prominently by Balmano Squire,* may here be referred to. It is a useful preparation, and may be especially recommended, of the strength of from fifteen to thirty grains to the ounce, in eczema rubrum of the lower extremities. It is most valuable where the disease is extensive, of a dusky-red hue, accompanied with weeping, infiltration, œdema, and swelling, and in varicose conditions.†

For obstinate circumscribed patches blistering with cantharides will sometimes be found serviceable. A similar result may be obtained from carbolic acid diluted with alcohol, from tincture of iodine, and from nitrate of silver. Vulcanized india-rubber is also a useful therapeutic agent. In the form of the solid rubber bandage or sheet, applied closely to the part, it serves to protect the skin and to exclude the air, and has a decided curative effect. When practicable, it should be employed continuously, day and night. It should be removed and cleansed once or twice in the twenty-four hours, when the skin may be wiped or rubbed dry with a rag, and the bandage or cloth reapplied.‡

* *Med. Times and Gaz.*, March 18 and 25, 1876.

† See a contribution to the subject, with cases, by Dr. Van Harlingen and myself, *Phila. Med. Times*, Aug. 3, 1878. The formula of Mr. Squire is as follows: Acetate of lead, 5 parts; litharge, $3\frac{1}{2}$ parts; glycerine, 20 parts, by weight. Mix, and expose to a temperature of 350° F., and filter through a hot-water funnel. The clear viscid fluid resultant contains 120 grains of the subacetate of lead to the ounce. This is used as a stock from which the preparations employed are made by dilution with glycerine.

‡ For further information on the treatment of eczema, the reader is referred to the monographs of Anderson (*A Practical Treatise upon Eczema*, including its Lichenous and Impetiginous Forms. Third edition, with illus-

Prognosis.—This must depend materially upon the circumstances attending the case in question. It may, however, be stated that the disease is always curable. There are a number of points which should be taken into consideration before an opinion is given as to the probable duration. The general health and condition are, in the first place, to be investigated; and in this connection the cause of the disease is, if possible, to be ascertained. In general diffused chronic eczema this question is one of the greatest importance, upon which the prognosis must entirely depend. The variety of the disease is next to be determined; whether the elementary lesions appear in a regular manner, or whether they incline to irregularity and polymorphism.

It is well known that certain varieties of eczema usually run obstinate and long courses, while others tend to recovery after reaching a certain stage. Acute inflammatory eczema vesiculosum, for example, is apt to run a short and definite course, while, on the other hand, eczema papulosum is prone to be chronic. The stage of the eruption is also to be taken into account, as well as the duration of the disease; further, whether it is a first attack or a relapse. It is, moreover, of moment to ascertain whether the disease be acute or chronic; whether the process tend to terminate spontaneously, or to run on indefinitely, with secondary changes.

The location of the eruption is also to be considered, for eczema of certain parts of the body is almost invariably obstinate. Upon the head and ears it is usually troublesome, and often tends to be chronic. About the nose and mouth the erythematous variety is generally unyielding. Eczema of the scrotum is likewise at times very rebellious. About the legs in old people, more particularly if complicated with varicose veins or ulcers, it is also more or less intractable.

LOCAL VARIETIES OF ECZEMA, THEIR DIAGNOSIS AND TREATMENT.

Eczema may show itself upon any part of the body. No region is exempt. It may manifest itself upon a small portion of the

trations. Phila., 1875) and Bulkley (The Management of Eczema. New York, 1882). The last-named work is the most comprehensive treatise on the subject, and is a valuable contribution to literature.

body only, or it may involve the whole integument. When the entire surface is affected, leaving no portion of the skin free, it is termed ECZEMA UNIVERSALE, the variety of the disease being in this event either erythematous or vesicular: so extensive a distribution of the disease, however, is of rare occurrence. Usually it appears in the form of one or more irregularly-shaped patches, varying in size from a small coin to the palm of the hand. It attacks certain regions of the body in preference. Inasmuch as it exhibits peculiarities of appearance and course as it is located upon one part or another, it will be necessary to give a description of the commoner of these so-called local varieties. I shall at the same time speak of their differential diagnosis and special treatment.

ECZEMA CAPITIS.—Eczema is frequently encountered upon the head, usually in the erythematous, the vesicular, or the pustular form. The former variety, as a rule, at once tends to take on a chronic course, and soon settles into the stage which is known as eczema squamosum. The patches are usually irregular in outline, and may occur either singly, as is generally the case, or in numbers upon any region. The disease may also involve the whole scalp. The itching is generally marked.

The pustular variety is commoner in children and young persons than in adults. It exists either in the form of a few patches of pustules, occurring here and there, or, as is much more likely to be the case, takes possession of the whole scalp. The pustules usually appear in great numbers, for the most part about the hair-follicles; they soon rupture, and the liquid oozing over the surrounding skin dries into greenish-yellow crusts. As the process goes on and new pustules are produced, which undergo the same course, the crusts become thicker and more bulky, until in time the whole scalp may be covered with a cap of crust. The hair becomes matted and matted, the sebaceous secretion collects, and soon, if the part be not frequently cleansed, the head becomes offensive. In this description we have a typical eczema pustulosum, which applies to adults as well as to children. The disease may last a few weeks, or for months or years. The itching is usually not so decided as in the other varieties.

Accompanying severe cases of pustular eczema of the head it is not uncommon to observe marked enlargement of the subcuta-

neous glands of the neck; they become swollen, and may present a bumpy appearance. The condition occurs particularly about the back of the neck, and also back of the ears. They are sympathetically affected, and increase and diminish in size as the disease is worse or better. They never suppurate, but may continue until the eczema disappears. Small abscesses are often met with upon the heads of unhealthy children, which tend to complicate the original affection. Pediculi are not infrequently found in connection with eczema capitis in children, either as a primary cause or in consequence of the matted condition of the hair constituting a favorable habitat for them. They are a common source of the affection among the poorly nourished and ill cared-for, and their presence or absence should be established at once. When present, they are exceedingly mischievous, and call for active treatment. They are apt to escape notice, owing either to the fact of their not being numerous, or to long and thick hair, which may conceal them. The nits, however, are usually to be found adhering to the hairs, and quite remote from the scalp.

The diagnosis of eczema capitis is at times difficult; it may be confounded with psoriasis, seborrhœa, favus, syphilis, tinea favosa, and tinea tonsurans. It may often be distinguished from psoriasis by its tendency, during some period of its course, to show moisture; psoriasis is never moist. In eczema the edges of the patches are not abrupt, but fade away into the healthy skin; in psoriasis the patches usually have defined borders. Eczema generally shows crusts if there has been any fluid exudation, or small fine scales if in the squamous stage; psoriasis presents the typical dry, thick, imbricated, whitish scales. Eczema may or may not involve the head alone; psoriasis of the head usually shows signs of its presence upon other regions of the body. Eczema of the head commonly occurs in the debilitated; psoriasis oftener in the robust. Eczema of the head is generally more itchy than psoriasis. In doubtful cases, the history and course of the affection may be of service in arriving at a diagnosis.

Eczema and seborrhœa not infrequently bear a close resemblance to each other. Eczema is prone to occur in patches, which, however, are seldom numerous; seborrhœa generally invades the whole scalp uniformly, or in numerous variously sized, ill-defined patches. The fluid discharge and consequent crusts of eczema are to be re-

membered; in seborrhœa there is no discharge, the product being composed of fine or coarse scales, of an oily or dry nature, which cake together and adhere to the scalp. Eczema is a much more acute and rapid process than seborrhœa, often making its appearance suddenly; seborrhœa, as a rule, develops itself by degrees. Eczema is markedly itchy; seborrhœa seldom so to the same extent, and often not at all so. Patches of squamous eczema are red and infiltrated; those of seborrhœa are generally pale red or bluish, and are not infiltrated.

Eczema can only be confounded with *tinea favosa* when it is of the pustular variety; in such cases the two diseases may readily be mistaken for each other, as the crusts have features in common. In eczema, however, the crusts are the result of previous pustules; in *tinea favosa* the crusts are peculiar, having begun primarily as crusts. The crusts of eczema are greenish yellow: those of *tinea favosa* are lemon or sulphur yellow; moreover, they are, when perfect, cup-shaped, rounded, discrete or confluent, tending to preserve their original shape; they form slowly, and are dry and friable. Sometimes the irritation of the skin produced by the parasite is so great as to cause a suppurative dermatitis about the crusts, in which event the diagnosis may be even more difficult. The odor about an eczematous head is often nauseous; about *tinea favosa*, where the disease is extensive, it is characteristic, being mousy. The microscope establishes the diagnosis at once, the crusts of *tinea favosa* being composed almost entirely of fungus, whose elements may be readily discovered under a power of three hundred diameters.

Eczema erythematosum or squamosum may readily be confounded with *tinea tonsurans*. Not infrequently the diagnosis is extremely difficult, especially in chronic cases, until the microscope is employed. The following clinical features may be mentioned. The patches of eczema are not attended with loss of hair; in *tinea tonsurans* many of the hairs are broken off more or less uniformly about an eighth or a quarter of an inch beyond the scalp, looking as though the patch had been closely ent. The hair in marked cases has a nibbled look. The follicles, moreover, are always diseased, causing the skin to have a goose-flesh appearance. The patches of recent *tinea tonsurans* are often circular or in segments of circles; in eczema they are usually roundish, but seldom sharply defined. The hairs in *tinea tonsurans* have a lus-

treless, dried, twisted, brittle appearance, and come out readily; in eczema they remain firm, unless scratched out by the patient. In dark-haired subjects the scalp has a dull, leaden color in tinea tonsurans. Even in light-haired subjects the inflammatory symptoms are rarely so marked as in eczema. Where tinea kerion exists, however, and where the disease is chronic, the diagnosis is more difficult. In doubtful cases the microscope should always be employed. The itching in eczema is marked; in tinea tonsurans it is often comparatively slight. A history of contagion is frequently to be found in connection with tinea tonsurans.

Certain late forms of syphilis of the scalp may be mistaken for eczema, and in these cases the diagnosis may be obscure. The crusts may be similar, but there are generally signs of ulceration in syphilis, which are altogether wanting in eczema. The ulcers are observed to have abrupt edges, and to have unhealthy-looking, grayish bases, with an abundant, thick, creamy or streaked secretion. There is no itching of any moment in syphilis, but in eczema it is usually marked, and is often excessive. The odor attached to syphilis of the scalp is usually penetrating and disgusting. The history of the case may be of value in assisting the diagnosis.

The treatment of eczema capitis will depend upon the variety of the disease, upon the stage it is in, and upon the state of health of the patient. The age of the patient must also be taken into consideration. If the case be of the pustular variety, it is of the first importance to have the crusts thoroughly removed; this is best accomplished by saturating the scalp with olive or sweet almond oil, and then washing with warm water and soap. If the crusts be in quantity and adherent, it will be necessary to allow the oil to remain on the head all night, a flannel skull-cap and bandage being put over the head. In severe acute cases, where the pustules are appearing from day to day, the application of oil, in the manner just described, constitutes in itself an excellent dressing, and may be employed at times when other remedies prove too stimulating. Glycerine and water, one part to two or three, or one of the petroleum ointments, will also be found useful; likewise lime-water and olive oil with the addition of five or ten grains of carbolic acid to the ounce. It is rarely if ever necessary to shave or to cut the hair. The value of a head of hair for a woman more than counterbalances the slight benefit derivable from its removal. In young

children and in boys, however, the hair in severe cases, especially if complicated with pediculi, may be cut close, in order that the part may be better attended to and the applications more thoroughly made. If nits be present in numbers, they, too, may be got rid of more promptly in this way. In inflammatory cases, *lotio nigra* or one of the carbolic acid lotions may be dabbed on the scalp for ten or fifteen minutes at a time, morning and evening, followed by an oily preparation. An ointment composed of from half a drachm to one drachm of the mild chloride of mercury to the ounce will be found of value, directions being given to use a small quantity, and to have it well rubbed in. In cases where washing and frequent cleansing appear to increase the inflammation, this proceeding had better be omitted for a few days. The ammoniated mercury in the form of an ointment, fifteen to forty grains to the ounce, also answers well; should there be pediculi present, it will also serve as a parasiticide. Ten grains of the red oxide of mercury to the ounce of vaseline may likewise be used.

Patches of squamous eczema require a stimulating treatment similar to that employed upon other portions of the body. The most valuable remedies are the tarry preparations, in the form of ointment or lotion, which, in one strength or another, will be tolerated in the majority of cases; instances, however, occur where they cannot be employed, owing to some peculiarity of the skin. One drachm of tar or of oil of cade to the ounce of alcohol, and the tincture composed of equal parts of *sapo mollis*, tar, and alcohol, form admirable mixtures for the more chronic cases, where decided stimulation is required. A milder preparation, composed of half a drachm or one drachm of oil of cade to the ounce of oil of sweet almond, is also useful. The various other stimulating preparations may be employed as occasion may demand.

ECZEMA FACIEL.—The face is a common seat of eczema. The disease here may be either acute or chronic. The erythematous variety is frequently encountered here in adults, in the form of patches about the forehead, cheeks, and other regions. The vesicular and pustular varieties are also frequent here, especially in children. Where the disease of the scalp is extensive, it is apt to spread itself somewhat over the forehead. The surface may be simply red, infiltrated, and slightly squamous, or it may show signs of moisture with crusts. Eczema of the face occurs much

more frequently in infants and children than in adults. The nose, especially about the *alæ* and nares, is not an infrequent situation for erythematous eczema in adults, where it is usually stubborn. The upper lip may also be involved. The itching is generally severe. Carbolic acid ointment I find especially useful in these cases. The oleate of zinc, a drachm to the ounce, with twenty or thirty grains of calomel, may also be recommended.

ECZEMA LABIORUM.—The disease occasionally attacks the lips, either alone or in connection with other parts of the face. One or both lips may be affected. The symptoms are swelling, redness, heat, infiltration, slight scaliness, and fissures. The skin around the border of the mouth may be the seat of the disease, or the vermilion of the lips and mucous membrane may be attacked. The mouth may be contracted, and the lips partly glued together by the exudation and crusts. The mucous membrane may be involved to such an extent as to be partly devoid of epithelium.

Both herpes labialis and syphilis possess features which may be confounded with eczema. Herpes always runs an acute course, lasting at most only a short period, and, moreover, shows itself in the form of a group or groups of vesicles. Eczema invades a greater amount of surface, and is invariably obstinate in its nature. Syphilis occurring about the mouth has a predilection for the angles, where it is usually localized; the fissures are often deep, and generally secrete a puriform product.

The treatment of this variety of eczema is difficult, and is attended with discomfort for the patient. Either strong or, on the other hand, mild applications are found to be of most service. Potassa or nitrate of silver solutions, carbolic acid and alcohol or carbolic acid and glycerine, half a drachm to the ounce, tar ointment, and other heroic remedies, may be tried; or, on the other hand, it may be that more relief is afforded by the emollient ointments and lotions, such as glycerine and water, oil of sweet almond, vaseline, and like preparations.

ECZEMA PALPEBRARUM.—This occurs often in children of a scrofulous disposition, showing itself along the edges of the eyelids. The hair-follicles are involved with small pustules which are succeeded by crusts. The parts are generally swollen, red, and itchy, and, unless frequently cleansed, tend to glue together. Conjunctivitis may or may not be present. The local treatment

must vary according to the intensity of the disease. If severe, the eyelashes may be extracted and the edges touched with a solution of potassa in water, ten grains to the ounce, as recommended by McCall Anderson. The edges should be carefully dried and the lid everted, a very small quantity on a delicate brush being applied. The alkali should be immediately neutralized with dilute acetic acid or vinegar. The operation may be repeated every few days, after which a weak ointment of the nitrate of mercury may be used. In mild cases this ointment, weakened, may be employed alone with good result. It is scarcely necessary to add that energetic internal treatment, with hygienic measures, is called for in almost all of these cases.

ECZEMA BARBÆ.—When the disease attacks the region of the beard it gives rise to much disfigurement, pain, and annoyance, and is generally found to be stubborn in its course. It is characterized by the rapid and extensive formation of pustules, which are situated in preference around the hairs. Crusts of a yellowish or greenish color are soon formed, which, matting the hairs together, adhere to the parts. A portion only or the whole of the beard may be involved. The disease may run an acute course, but more frequently it takes on chronic action. It may be confined to the hairy portions of the face, or it may, and often does, extend to other regions of the face. In this respect it differs from *sycosis non-parasitica*, which is always limited to the hair-follicles. As regards the general features, these two affections are very similar, but the difference is in most cases sufficiently clear when the various points of distinction are carefully viewed. *Sycosis* is an inflammation of the hair-follicles only,—a *folliculitis barbæ*, characterized by the formation of papules, tubercles, and pustules; the process is a deep one, and is concerned with the follicles themselves. In *eczema* the process is more superficial, and extends over the surface, involving the follicles in its course exactly as in *eczema* of the scalp. Papules and tubercles, common in *sycosis*, are wanting in *eczema* of the beard. The general history of the case will aid in distinguishing the two diseases.

Tinea sycosis also resembles *eczema barbæ*; but, remembering certain symptoms always found in the former affection, error can scarcely occur. Crusts are generally abundant in *eczema*; in *tinea sycosis*, except in extreme cases, they are scanty. The crusts being

removed, the surface of the skin in eczema is smooth; in tinea sycosis it is often uneven, lumpy, or tubercular. This point is of value in diagnosis. The hairs of eczema are not to be plucked without pain, for they are firmly seated in their follicles. In tinea sycosis they almost drop out of their own accord. The hairs themselves, examined either with the naked eye or with the microscope, are found to be different: in eczema they are straight, with a luxuriant-looking, glutinous mass—the root-sheath—attached to their roots, while in tinea sycosis they are crooked or twisted, and are usually dry. In eczema there exists no fungus; it is always present in tinea sycosis, and may readily be detected with the microscope. Eczema is not contagious; tinea sycosis is highly so, and its source may, moreover, often be traced to tinea circinata, either upon other parts of the body or upon other members of the family.

The treatment, to be effectual, must be energetic and decided. After the crusts have been taken off by means of poultices or warm water and soap, the part is to be cautiously shaved. The first operation is apt to be painful, but, after this, patients, as a rule, do not complain. The beard is to be kept clean, shaving being resorted to every other day, or as may be necessary. This is an important part of the treatment. The difficulty of bringing the remedies into immediate contact with the skin if the stiff hairs are permitted to protrude will be appreciated. If the process be acute, the method of treatment by means of unguentum diachyli and soap, either castile or *sapo mollis*, may be directed, the disease being managed in the same manner as upon the non-hairy portions of the body. The applications may be employed continuously, both day and night, or only at night. The parts should never be rubbed vigorously, or the soft soap applied, unless the ointment is to be afterwards bound on. In the chronic stage, stimulating ointments, such as a sulphur ointment, half a drachm or a drachm to the ounce, or a white precipitate ointment, fifteen or thirty grains to the ounce, are to be used. The prognosis is favorable, provided the patient is able to carry out the treatment faithfully; but the cure, even under these circumstances, is often tedious.

ECZEMA AURIUM.—The ears are a frequent seat of eczema, in both children and adults, and may be involved in connection with

the disease upon contiguous regions, or they may alone be attacked. The erythematous, vesicular, and pustular varieties all occur here. In the acute stage the ears become swollen and red, and are the seat of severe burning and itching. One or both may be attacked, more commonly both. The process often extends into the meatus, causing occlusion and temporary deafness. When there are vesicles or pustules, crusts form and envelop the whole appendage; in other cases there is thickening, with desquamation in the form of flakes or large scales. The meatus, when attacked, is usually affected in this latter manner. The diagnosis of erythematous eczema of the external auditory canal is often overlooked.

On account of the peculiar anatomical structure of the ears, the successful application of remedies is difficult. Ointments will be found most serviceable. The preparations of tar are of particular value, and are usually tolerated after the acute stage has passed away. Calomel is also very useful, in the strength of half a drachm to the ounce. When the disease is located about the meatus, care is to be observed in the use of strong remedies, lest the application have an injurious effect upon the membrana tympani. The canal should be washed out by means of a suitable syringe, and cleansed of crusts and scales. A few drops of oil of sweet almond may first be introduced, to soften the mass. The use of potassa solutions, followed later by stimulating ointments, as suggested in the treatment of eczema of the eyelids, will sometimes be found of service. If strong or caustic solutions are employed, care is to be exercised in protecting the drum and in counteracting the effects of the caustic. The disease is usually obstinate.

ECZEMA ARTICULORUM.—Eczema generally selects the flexor surfaces for its seat: the axillæ, flexor surfaces of the elbow-joints, popliteal spaces, groins, are all favorite regions. The disease rapidly passes into the moist state, attended by maceration of the epidermis, which is kept up either by the motion of the parts or by the rubbing of opposite surfaces. The process is almost always symmetrical. In certain of the localities mentioned it passes into the condition known as eczema intertrigo, to be referred to.

ECZEMA GENITALIUM.—These organs are frequently attacked, occasioning most distressing symptoms. In the male the scrotum and penis may be involved together, or either alone may be the

seat of disease, but the scrotum is the region commonly affected. Owing to the rich supply of lymphatics, it is apt to be considerably swollen and œdematous. Moisture, crusts, and painful fissures are prone to occur, followed by extensive thickening. The itching is usually severe. It is an extremely harassing form of the disease, and is generally obstinate. The female organs suffer like symptoms. The labia are usually affected, but the vagina may also be invaded. The disease may further extend to the surrounding parts, including the mons veneris and perineum. When the labia are attacked they are swollen and generally œdematous. They are bright or dark red in color, hot and inflamed, and ordinarily discharge freely from their surfaces; crusts form, and the opposing surfaces are apt to become more or less glued. At other times no discharge takes place, the parts being simply erythematous and slightly scaly. The itching is violent, and at times occasions intolerable misery. The causes of the disease in females are often to be referred to uterine disorder.

Eczema of the genital organs in either sex at times yields easily to treatment, and in other instances is in the highest degree intractable. Upon the scrotum, the method by means of *sapo viridis* and *unguentum diaehyli* will often be found to relieve the symptoms when other means have failed. Potassa solutions, half a drachm or even a drachm to the ounce, may be applied in place of the soap. But these powerful caustics are never to be used without counteracting their effects by means of water or dilute acids; bland ointments, moreover, should always immediately succeed their use. In the acute stage of the disease, *lotio nigra* may be recommended, to be followed by an ointment of oxide of zinc and calomel, half a drachm to the ounce. Carbolic acid, in the form either of lotion or of ointment, ten or fifteen minims to the ounce, is an invaluable remedy in many cases. Thymol is also useful. Stimulating ointments, as the mercurials and tarry remedies, may be in turn tried, for it frequently happens that one preparation will answer when another of a similar kind fails in giving relief. Painting the part cautiously with tincture of iodine will sometimes prove useful.

ECZEMA ANI.—The anus is frequently alone attacked; in other instances the perineum and the genitalia are also involved. The part becomes red, infiltrated, and thickened, either with or without

fluid exudation. Fissures are generally present, and more or less pain consequently attends each movement of the bowels. The itching and burning are of a most persistent and annoying character, and are generally worse at night. The disease is increased by the friction of the opposing nates, and by the heat, perspiration, and sebaceous secretion. Care should always be exercised in diagnosing between pruritus and eczema. In the former, it will be remembered, there exists no eruption, except that produced by rubbing and scratching. In eczema one or more of the characteristic symptoms will be present, and will aid in distinguishing between the diseases. The treatment is the same as that which has been directed for eczema of the lips.

ECZEMA INTERTRIGO.—This has been spoken of when considering eczema as it appears about the joints. It occurs upon the inner surfaces of the nates, in the groins, beneath the mammæ, and in other localities where folds of skin naturally come in contact with one another. A moist, macerated surface is the result, which is greatly increased by movement, walking, and inattention to cleanliness. It is oftenest met with during warm weather. Eczema of this description is not to be confounded with erythema intertrigo, or chafing, a hyperæmic affection which is common in summer among people of all ages and classes. An erythema intertrigo, however, if neglected, may and often does pass into an eczema intertrigo. The parts should be washed with water, unless followed by some remedy, but seldom. Oxide of zinc, oleate of zinc, and starch dusting powders, with or without calomel, or astringent lotions, as of acetate of lead or acetate of zinc, a few grains to the ounce, may be used to advantage, the opposing surfaces being separated, and if possible retained in this position by means of lint or cloths. Boracic acid lotion, ten or fifteen grains to the ounce, with half a drachm of glycerine; and boracic acid ointment, a drachm to the ounce of vaseline, may both be referred to as valuable. Salicylic acid in the form of an ointment, fifteen grains (dissolved in alcohol) to the ounce, is also useful; likewise salicylated starch, used as a dusting powder.* Complete

* Kersch recommends that the starch be gradually mixed with a two or three per cent. alcoholic solution of the acid. Abstract in Dublin Jour. Med. Sci., Nov. 1881.

rest and attention to the treatment, will go far towards modifying the symptoms and relieving the affection.

ECZEMA MAMMARUM.—The breasts in the female are at times the site of a stubborn eczema, which generally localizes itself in a circumscribed form about the nipples. One or both may be invaded. It is met with for the most part in women who are nursing, but it also appears in those who are not nursing, and in single women. It ordinarily assumes the vesicular form, soon becoming eczema rubrum, and is attended with crusts and extensive fissures. When exposed to the sucking of the child, pain is experienced, to such a degree that the mother is compelled to withdraw the infant either temporarily or permanently. The disease is always aggravated by nursing. The affection is encountered most frequently in primiparæ. The nipples in severe cases become retracted, sink in the breast, and are covered with crusts. The diagnosis is not difficult, but the mammæ, it will be remembered, are also usually affected in seabies.

When practicable, the best and most expeditious treatment will be found in the *sapo viridis* and *unguentum diachyli* method, already described. The parts, though apparently tender and sensitive, will tolerate the free use of the soap and friction in most cases, and after being properly dressed will feel greatly relieved. The applications may be made once or twice a day. The boracic acid and salicylic acid ointments, referred to on the preceding page, will be found useful; also the ointment of oleate of zinc. Before nursing, the nipples should first be anointed with olive oil, to soften the ointment, and then washed with soap and water. After nursing, the ointment may be reapplied. Unless treated vigorously, eczema of the breasts is apt to prove of a refractory nature.

A rare obstinate affection of the skin of the areola and nipple, elassed usually as chronic eczema of the nipple, is sometimes followed by cancer, as has been shown by Paget,* and more recently by Thin.† The latter observer proposes that the disease, which is peculiar, shall be termed “malignant papillary dermatitis,” it

* St. Bartholomew's Hospital Reports, 1874

† Brit. Med. Jour., vol. i., 1881, pp. 760, 798. See also Munro's article, Glasgow Med. Jour., Nov. 1881.

being characterized by destruction of connective tissue. In distinguishing it clinically from simple eczema, the chief points to be borne in mind, according to Thin, are the well-defined margin, and the evidence, when the disease is taken between the fingers, of infiltration in the papillary layer. The same observer states that the disease is duct cancer, developed from the epithelium of the lactiferous ducts, and not true scirrhus or parenchymatous cancer, which is developed from the secreting epithelium of the acini.

ECZEMA UMBILICI.—This is met with either alone or in connection with the disease upon other parts of the body. The navel itself may be the only portion involved, or the surrounding skin, in the shape of a circular patch, may also be affected. It is usually moist and fissured. A disagreeable odor is generally connected with the exudation, and crusts form and adhere to the skin. The diagnosis is sometimes rendered difficult by the fact that syphilis attacking this locality often simulates eczema. Ulceration, however, will be encountered in syphilis, and the odor, moreover, will be offensive. The treatment will depend upon the variety of the disease present, upon the extent of skin involved, and upon peculiarities in the formation of the navel. An ointment of oleate of zinc, a drachm to the ounce, with fifteen or thirty grains of calomel, will often prove of value.

ECZEMA CRURUM.—The legs are among the most common localities attacked, especially in old people, both male and female. Eczema here gives rise to a chronic condition which may last for years. It appears in the form of the erythematous and vesicular varieties, which, however, soon lose their distinctive features, passing, as a rule, rapidly into eczema rubrum or eczema madidans. One or both legs may be affected. Other portions of the body are not, as a rule, assailed at the same time; patients may have eczema of one or both legs for a long period without showing any trace of the disease elsewhere. It is rare among young persons, but more common as age advances, while among middle-aged and old people, especially in dispensary practice, its occurrence is extremely frequent. It shows itself in the shape of one or more patches, varying in size, seated in preference upon the anterior surface of the limb. The patches, if small, ordinarily coalesce, and form one continuous patch, involving often the greater portion of the leg. When chronic,—the state in which it generally first comes under

notice,—the leg usually presents the following appearances. It may be deep red in color, covered in part or wholly with large, thick, yellowish or brownish crusts, discharging here and there between the crusts the ordinary fluid, either clear or mixed with pus and blood. In places the skin is laid bare, the result of scratching, and shows an inflammatory, punctate, oozing surface. On the other hand, the leg may be red, without moisture or crusts, exhibiting a smooth, shining or scaly, unbroken skin, in the form of patches, or, more commonly, one large patch. Both forms of the disease are, however, attended with infiltration, thickening, inflammatory symptoms, and itching. Eczema crurum is frequently associated with varicose veins, this being a common origin of the disease. Ulcers resulting from the breaking down of these veins are often present, and complicate the condition. The diagnosis is rarely obscure. The hypertrophic state of the tissues known as elephantiasis Arabum is at times accompanied by eczema; the eczema here, however, will be recognized as being secondary to the original affection. If varicose ulcers happen to be present, they are to be distinguished from syphilitic ulcers, which often show themselves in this region.

The treatment will depend upon the variety, stage, and extent of the disease, and also upon the surroundings of the patient. In cases of moist eczema, the most successful plan of treatment is that consisting in the employment of *sapo mollis* and *unguentum diachyli*, already described. It is in these cases that the most favorable results follow this treatment, provided it be properly carried out. Where the disease is not in a discharging state, other methods, involving less time and trouble, may be substituted, and often with equal success. The various remedies referred to in considering the general treatment of eczema may all be prescribed, as may appear suitable to the case. A prescription containing calomel, half a drachm, oxide of zinc ointment, four drachms, and vaseline, four drachms, will be found serviceable for many cases, especially where the disease exists in discrete patches. It is necessary where there are varicose veins, or where there is tendency to swelling, that the limb be properly bandaged. The bandage should be applied both for the purpose of retaining the dressings in their place, and for supporting the leg and relieving the congestion. This will prove of comfort to the patient, and will materially hasten the cure.

Uleers, when present, may receive the same management as the eezema. Of great value in the treatment of ehronic eezema of the legs, especially when complicated with uleers, is the india-rubber bandage, brought to the notice of the profession by Martin,* and later by Bulkley.† The bandages should be made of the best rubber, and should be thin and elastic. They are to be applied directly to the skin, the limb being first cleansed. As a rule, the bandage is worn only during the day. On removing it at night it should be washed and dried; the limb should be similarly treated, and enveloped in a muslin bandage or other cloth dressing for protection. In long-standing ehronic eezema accompanied with thickening, cedema, or varicose veins, it will be found a most valuable method of treatment. There are some cases, however, in which this treatment does not answer, causing increased inflammation and the production of small pustules. A few days will usually determine its efficacy or the reverse.

ECZEMA MANUUM.—Owing to the peculiar anatomical formation of the skin about the hands, as well as to the exposure to which they are subjected, they are very frequently the seat of disease. One or both hands may suffer; ordinarily both are affected. The feet may be attacked at the same time, though this rarely occurs. All of the varieties of eezema are encountered upon the hands; erythema, vesicles, papules, and even pustules, are here seen in their typical form. Fissures, sometimes long and deep, are usual about the knuckles, and upon the palms and also the backs of the hands. They constitute annoying and painful lesions, and are hard to manage on account of the constant motion which is necessarily taking place. The hands are subject to acute as well as ehronic eezema. All of the fingers are usually more or less involved, especially upon their lateral surfaces; in cases of vesicular eezema of the sides of the fingers the entire epidermis is at times undermined by fluid, forming in some cases small blebs. In connection with ehronic eezema of the fingers, the nails are also frequently diseased.

The causes of eezema of the hands are numerous. Chemists,

* Trans. Amer. Med. Assoc., vol. xxviii. p. 589; Chicago Med. Jour., Oct. 1877; Brit. Med. Jour., Oct. 26, 1878.

† Arch. of Derm., July, 1878.

workers in alkalies or acids, bricklayers, bakers, grocers, cooks, and others, who have their hands continually exposed to the action of irritants, are liable to be attacked. Among the various substances none act upon the skin more deleteriously than alkalies.

As scabies always affects the fingers in preference, the diagnosis between eczema and this disease is sometimes extremely difficult. The presence of the parasites, as proved by the burrows, which are to be sought for on the lateral surfaces of the fingers, is at times necessary to determine the diagnosis. In eczema the vesicles are apt to be numerous, and crowded upon a given portion of the hand; in scabies they are more scattered, and are found alike over all the fingers. The vesicles and pustules of eczema are small; in scabies they are of variable size, and often large. The vesicles of eczema usually rupture shortly after they form, especially upon parts where the epidermis is thin; in scabies they often remain whole until disturbed by scratching or other mechanical means. The vesicles of scabies commonly exhibit a fine, dark, irregular line, made up of points, through their summits, being the original burrow in the epidermis which has been raised by the formation of the vesicle. The peculiar distribution of scabies over certain regions of the body will, with the above features, generally enable the diagnosis to be made. Vesicular eczema of the hands may also be confounded with dysidrosis and pompholyx.

Eczema of the hands and fingers is particularly intractable. The hands must be protected from all irritating influences; they should be kept out of water, and the free use of soap prohibited; exposure to heat should also be avoided. Rubber gloves will in some cases be found useful; but in the majority of cases one of the stimulating ointments, as of calomel, white precipitate, or tar, will prove most serviceable. These may be used alternately with one of the milder ointments, as, for example, oleate of zinc, half a drachm or a drachm to the ounce.

ECZEMA PALMARUM ET PLANTARUM.—Eczema presents the same features in both of these regions. Owing to the thickened state of the epidermis, it gives rise to peculiar lesions, which sometimes obscure the diagnosis. Infiltration, thickening, callosity, dryness, and fissuring usually mark the disease. It is generally a chronic condition, and frequently lasts a long while. The fissures are often deep and so painful that the patient is unable to use

his hands, or, if upon the soles, to walk. One or both palms or soles may be affected, either alone or in connection with other parts. At times palms and soles are simultaneously attacked.

The diagnosis is sometimes attended with difficulty, inasmuch as both psoriasis and syphilis are often localized upon these regions and may bear a close resemblance to eczema. Eczema differs from psoriasis in the following points. The fissures of eczema are apt to be slightly moist and bloody; in psoriasis they are dry, and show but little tendency to bleed. The patches of eczema are generally larger and more diffused than those of psoriasis. In psoriasis the edges usually terminate abruptly; in eczema they pass gradually into the healthy skin. The color of psoriasis is usually of a deeper hue than that of eczema. The scales, moreover, of psoriasis are whitish or grayish in tint, while in eczema they are more or less yellowish. The scales of psoriasis are also larger and thicker and more abundant than those of eczema. The itching is usually more marked in eczema than in psoriasis. The presence of either disease on other parts of the body will be sufficient to clear away doubt.

Syphilitic manifestations frequently show themselves on the palms and soles, and must be distinguished from eczema. The infiltration of syphilis is of a firmer nature than that of eczema; it also extends deeper into the tissues, and gives the sensation of there being a compact deposit in the skin. Eczema is usually much more uniformly diffused than syphilis; the patches of syphilis are apt to be smaller and more circumscribed, and to have a tendency to spread on the periphery. Syphilis, as a rule, does not itch; eczema does, though not always severely. In syphilis the line of demarcation between disease and health is generally sharply drawn. The history may be of some assistance in determining the nature of the lesion.

The treatment is that of eczema rubrum, stimulating and strong remedies being, as a rule, demanded. Tar, calomel, white precipitate, and oleate of mercury are all useful. Four drachms of tar ointment, four drachms of vaseline, with half a drachm of calomel, will be found a serviceable formula. Oleate of mercury may be prescribed in the strength of from five to fifteen per cent. to the ounce of simple ointment.

ECZEMA UNGUIUM.—Eczema occasionally assails the nails.

One or two or all may be affected. They are, however, not often involved alone, but commonly in connection with eczema of the fingers. The disease is characterized by roughness, want of polish, unevenness, and a punctate or honey-comb appearance, which latter sign, however, belongs also to psoriasis. The nail becomes depressed, particularly at its root, at which point its proper nutrition is arrested. The nail may remain in its diseased condition until by degrees it recovers, or it may be cast off and regenerated. Internal treatment, especially arsenic, is of greatest importance. Local treatment is to be directed to the root rather than to the nail itself.

HERPES.

HERPES IS AN ACUTE, INFLAMMATORY AFFECTION, CONSISTING OF ONE OR OF SEVERAL GROUPS OF VESICLES, OCCURRING FOR THE MOST PART ABOUT THE FACE AND GENITALIA.

Symptoms.—It is often preceded and attended by slight symptoms of malaise and pyrexia. Sometimes these symptoms are marked. It may occur either alone or in the course of a number of febrile diseases, as pneumonia, pleurisy, and the various fevers. The lesions usually appear in the form of a small cluster, and may coalesce; they are few in number, rarely more than three or four. They are pin-head to split-pea sized, and contain at first a clear or cloudy watery fluid, which becomes somewhat puriform and desiccates in small yellowish or brownish crusts. If rubbed or picked, an excoriation, usually superficial, takes place, which cicatrizes without leaving a scar. The appearance of the vesicles is generally preceded by a feeling of heat in the region, together with sometimes swelling. The affection is apt to recur from time to time. It is an acute disorder, seldom having a duration of more than a week. There are two distinct regions in which herpes generally shows itself, from which circumstance the terms herpes facialis and herpes progenitalis have arisen.

HERPES FACIALIS.—This may occur upon any part of the face, although it is commonly encountered about the lips, and especially the vermillion of the lips; hence the name *HERPES LABIALIS*. It is frequently seen upon the alæ of the nose; more rarely it is observed upon other regions of the face, and on the auricles. The mucous membrane of the mouth, and the tongue, are also not infrequently

the seat of this form of herpes. Here the vesicles rupture early through maceration, and therefore are seldom observed as vesicles, but rather in the form of excoriated patches. Upon the lips the vesicles are usually small, few in number, and confined to one cluster. The upper lip is more commonly affected. The lesions may either remain single or may coalesce, forming a vesicular patch, which terminates in a brownish crust. No ulceration takes place, and consequently no scars result. Herpes facialis is usually caused by some febrile or nervous disturbance of the system. It is seen in connection with slight digestive disorders and colds, and also attending more serious affections, as intermittent and typhoid fevers.

HERPES PROGENITALIS.—Upon the male this is observed chiefly about the prepuce, especially on the inner layer, which occurrence has given rise to the term HERPES PRÆPUTIALIS. It may also occur upon the glans and upon the integument of the organ. According to Greenough, of Boston,* the parts most liable to be affected are the sulcus, the reflected mucous membrane of the prepuce, the glans, the margin of the prepuce, and the skin on the shaft, the regions being mentioned in the order of the frequency with which they are attacked. In the female it may show itself upon the labia majora and labia minora, and also upon the skin about the vulva. But the affection is rare in the female. It is essentially a disease of youth and early middle age. It is seldom encountered after the age of forty. The attack is usually preceded by a feeling of uneasiness, slight burning or itching, or neuralgic pain in the part, accompanied by redness, congestion, and more or less œdema. This is soon followed by one or two or a small group of vesicles, more or less perfectly formed, seated upon an inflamed patch. The vesicles may or may not be accompanied with marked areolæ. The number of lesions varies. They are rarely less than two or three in number or more than ten or twelve. As a rule, from four to six are present. In size they vary from a pin-head to a small pea, and when multiple are apt to coalesce. They pursue a benign course, and, unless irritated, incline to heal in from one to two weeks. As a rule, only one

* Archives of Dermatology, Jan. 1881. An admirable article on the subject, read before the American Dermatological Association.

cluster is seen. The smarting and burning sensations are at times marked; in other cases insignificant. Sometimes pain is present, and it may be severe, involving the sacral plexus of nerves. Mauriac* has described such cases, which, however, might be more properly viewed as herpes zoster. The vesicles frequently run together and form small patches, which may become covered with a crust. Upon the inside of the prepuce and upon the inner surface of the labia the vesicles commonly break down and result in excoriations, which resemble superficial ulcers covered with a whitish deposit. Occurring here, the affection is liable to be mistaken for one form or another of venereal disease. The lesions are occasionally very much like those of chancroid, and great care is in these cases necessary in order to make the correct diagnosis. The lesions of chancroid are seldom as numerous as those of lupus. The course of herpes, however, always enables the observer to come to a definite conclusion upon this point. A few days or weeks suffice to determine the question, for within this time herpes will have disappeared spontaneously, whereas a venereal ulcer will have increased in size. The affection may also be confounded with erosions on the dorsum of the glans penis. It can scarcely be mistaken for the initial lesion of syphilis. Where there is doubt, ample time should be allowed to pass before pronouncing positively upon the nature of the affection. Herpes progenitalis is exceedingly prone to recur repeatedly throughout life, and sometimes periodically. Its tendency to relapse is marked. With reference to this peculiarity, Doyon,† in an able monograph, considers the disease under the name of "relapsing herpes." Very frequently it will be found to have been preceded by the act of coitus. There are many who experience an attack after every coitus. Concerning the cause of the affection, it may be stated that the subjects of herpes progenitalis are apt to have previously suffered from one or more of the three chief venereal diseases, gonorrhœa, chancroid, and chancre. Greenough remarks that he has never seen a case where such was not the fact, and places gonorrhœa first in the list of causes. It would appear,

* *Leçons sur l'herpès névralgique des organes génitaux.* Paris, 1877. See also Bumstead and Taylor on the Pathology and Treatment of Venereal Diseases, 4th ed., Phila., 1879.

† *L'herpès récidivant des parties génitales.* Paris, 1868.

therefore, that these diseases leave the parts with a tendency to this affection, an analogy to which is found in the case of condylomata acuminata occurring about the genitalia. The origin of the disease must, I think, be viewed as local. It is oftenest encountered in those with long prepuces, a condition which certainly predisposes to the affection.

Treatment.—The lesions should be guarded from rupture and irritation, and a cerate or ointment used to protect them from excoriation. Cleanliness, in the case of herpes progenitalis, is also important. Lotions consisting of dilute ammonia-water, of lead-water, of sulphate of zinc, five or ten grains to the ounce, or of glycerine, are often grateful. Washing the parts with a saturated solution of boracic acid, or with the solution of chlorinated soda and dusting with calomel, are both useful in herpes of the genitals. Borated cotton will also be found a valuable dressing for the lesions. As a prophylactic measure, circumcision, where required, may be practised. Astringent lotions, as of tannic acid or sulphate of zinc, may also be used with the view of rendering the parts less sensitive.

HERPES GESTATIONIS.—Under this name Milton,* Bulkley,† and more recently Living,‡ Cottle,§ and W. G. Smith,|| have described a rare affection of the skin, peculiar to pregnancy, and which they regard as a variety of herpes. It consists in the development of erythema, papules, vesicles, and bullæ, vesicles predominating. They are attended with intense itching and burning sensations. They are commonly grouped, but do not follow any nerve tracts. The vesicles and bullæ vary in size; they may be pea sized or as large as a walnut. The lesions usually first appear on the extremities, and afterwards involve other portions of the body. It is an affection directly dependent upon the gravid state

* The Path. and Treat. of Diseases of the Skin, p. 205. London, 1872.

† Amer. Jour. of Obst. and Dis. of Women and Children, Feb. 1874.

‡ Lancet, vol. i., 1878, p. 783.

§ St. George's Hospital Reports, 1879.

|| Dublin Jour. of Med. Sci., Jan. 1881.

Wilson was the first to mention the disease. He speaks of it as "herpes circinatus bullosus." (Diseases of the Skin, p. 294. Lond., 1867.) Hardy, under the name of "pemphigus pruriginoux," also mentions the affection. (Leçons sur les maladies de la peau, p. 137. Paris, 1863.)

of the uterus. It may appear at any period of gestation up to the seventh month, and when present usually continues until after delivery. It does not terminate in its course immediately after delivery, but slowly retrogrades by the development of fewer and fewer vesicles; it is apt to recur with succeeding pregnancies. It is at times accompanied by urticaria, neuralgia, and other neurotic affections.

HERPES ZOSTER.

Syn., Zona; Cingulum; Ignis Sacer; Zoster; Shingles; *Germ.*, Gürtelkrankheit; Feuergürtel; *Fr.*, Zona.

HERPES ZOSTER IS AN ACUTE, INFLAMMATORY DISEASE, CHARACTERIZED BY GROUPS OF VESICLES SITUATED UPON INFLAMED BASES, ACCOMPANIED BY MORE OR LESS NEURALGIC PAIN.

The disease generally commences by slight or marked neuralgic pains, which are experienced not infrequently for several days before any sign of eruption shows itself. Kaposi states that in rare cases these pains may exist for as long as from three to six weeks preceding the outbreak. They may be diffused over the whole of the region about to be attacked, or, on the other hand, localized to one or more points. Sometimes pain is altogether wanting. It is usually of a severe nature, and involves both the deeper and the more superficial structures of the region, and in a manner altogether disproportionate to the amount of eruption which follows. In severe cases febrile symptoms, more or less marked, are usually present. An inflamed condition of the skin, usually in the form of patches, is now observed, attended with heat and burning sensations, and groups of papulo-vesicles appear over the region. They soon become vesicles, and are of the size of pin-heads and small split peas, usually discrete, and are situated, as a rule, on a bright red highly-inflamed surface. They may be crowded together, when they are apt to coalesce, forming irregularly-shaped patches. The vesicles continue to appear, one group after another, until from the fourth to the eighth or tenth day, when the eruption is usually at its height; it stands in this condition for a few days, when it decreases, the vesicles drying up, until, at the end of two weeks or longer, nothing remains but dry, brownish crusts. These drop off in time, leaving, as a rule, scars, more or less pronounced, according to the severity of the

attack. The vesicles do not burst as in eezema, but remain intact throughout their course. They contain a clear yellowish fluid, which, as the disease declines, gradually turns thicker and becomes puriform. When at its height, the eruption is generally perfect in its anatomical characters, the vesicles being well shaped, fully distended, with translucent, yellowish contents, and seated upon a bright inflammatory patch of skin.* Some of the groups, however, those that appeared first, are generally more fully developed than others; those that were last to appear, as a rule, do not become typically formed, so that the eruption may often be seen in its various stages upon the same individual. The vesicles always tend to group, and are usually crowded together. The number of groups is exceedingly variable. Sometimes only a single group exists, while in other cases as many as four or eight may form. Where the disease is extensive, the groups may be so numerous and close together as to coalesce and form one or more large patches. In other cases they are more widely distributed, and sometimes are far apart. The disease runs an acute course, lasting generally from ten days to three weeks or more, according to the severity of the attack, from its commencement to its termination. In severe cases, and especially where the disease is hemorrhagic, the duration may be much longer, sometimes as long as two or even three months. It is usually characterized by well-marked symptoms.

Herpes zoster may also run an abnormal course, the above symptoms being only in part present. The vesicles may not be characteristic, appearing rather as abortive vesicles, or even as papules or papulo-vesicles; on the other hand, small bullæ and pustules may occasionally show themselves. In severe zoster it is not uncommon for some of the lesions, or even groups, to become hemorrhagic (*HERPES ZOSTER HEMORRHAGICUS*), in which case they show a bluish-red or purplish color. Where the disease assumes a virulent type, especially in elderly persons, it may be followed by serious sequelæ in the form of persistent and painful neuralgia, want of sensibility in the affected part, local paralysis, more or less atrophy of the muscles, and falling of the hair or teeth. Zoster of the orbital region is particularly liable to be

* See my Atlas of Skin Diseases, Plate R.

followed by sharp neuralgic pains, lasting sometimes for months or even for years, and later by anæsthesia. Sometimes the eye becomes involved, first as a corneal inflammation and secondarily as an iritis, the process occasionally terminating in loss of sight or even in death. There are also certain cases in which the whole process is checked in its course just as the distinctive symptoms upon the skin are about appearing. The neuralgic pain varies in intensity; at times it is slight, in other cases it is exceedingly severe. In children, in mild cases, it is often insignificant. In elderly adults or old persons it is usually sharp and often severe. As a rule, it is in the ratio of the age of the individual. The amount of eruption is seldom in any manner proportionate to the pain.

The disease attacks various regions of the body, but has decided preference for certain parts. It is in almost all cases found upon well-known nerve tracts. There are, however, exceptions to this statement, where the origin of the disease would seem to be much nearer the surface, as shown by the distribution and by other symptoms. It is almost invariably confined to one side of the body. In rare instances, especially about the head and face, it is encountered on both sides. J. Jamieson* records a case of bilateral herpes zoster where the face, neck, and arms were all attacked simultaneously. Such cases are very rarely encountered. According to the region upon which the disease shows itself, it is termed ZOSTER CAPITIS, Z. FACIEI, Z. NUCLÆ, Z. BRACHIALIS, Z. PECTORALIS, Z. ABDOMINALIS, Z. FEMORALIS. To express the precise locality invaded, other terms indicative of the anatomical region are also employed, as, for example, CERVICO-BRACHIALIS, DORSO-PECTORALIS, CERVICO-SUBCLAVICULARIS, OCCIPITO-COLLARIS, DORSO-ABDOMINALIS, LUMBO-INGUINALIS, LUMBO-FEMORALIS, SACRO-ISCHIADICUS, SACRO-GENITALIS, etc. About the head, it is encountered both on the scalp and on the forehead (Z. FRONTALIS). The eruption here usually makes its appearance on the course of the supra-orbital nerve, passing upwards over the scalp. The eye is liable to become involved (Z. OPHTHALMICUS), and the pain is sometimes very severe. There is generally injection of the conjunctiva, and sometimes inflammation of the cornea and

* Australian Med. Jour., May, 1877.

iris, followed by profound disturbance of the organ. The ear may also be attacked (Z. AURICULARIS). The disease may also begin at the back of the head, spreading forward and occupying the whole side. The face alone, especially the cheek, may also be the seat of the disease; likewise the side of the neck, on a line with the second and third cervical vertebræ, extending forward towards the larynx. In zoster brachialis the eruption usually first makes its appearance in the region of the lower cervical vertebræ, passing over to and down the arm to the elbow, or even farther. The flexor surface is commonly attacked. The chest is another region often involved, the lesions forming parallel with the ribs. The intercostal nerves here determine the track of the eruption. Zoster in this locality generally gives rise to great pain and difficulty in breathing; in its early stage the distress may readily be mistaken for incipient pleurisy. The abdominal region, supplied by the lower dorsal and lumbar nerves, is very similarly affected. The two last-named regions are the most common local varieties of zoster, and have occasioned the name by which the disease is known. The disease also occurs on both the anterior and the posterior surface of the thigh, and on the buttock. It is also met with about the genitalia. It rarely occurs below the knee.

The course of herpes zoster is always acute, though somewhat variable as to duration, terminating in recovery. The process is not infrequently attended by a certain amount of ulceration and subsequent cicatrices, which in severe cases may remain for life. The affection rarely occurs twice in the same individual.* Neuralgic pains are not infrequently present about the seat of the eruption long after all traces of the disease have disappeared. Sometimes, especially in elderly persons, they remain persistently for years. The disease is commoner in the winter than in the summer. It is met with in both sexes, and in children as well as in adults; it is seen in the very young and also in the aged. From the statistics of the American Dermatological Association it appears that 262 cases were encountered out of 16,863 cases of

* Kaposi reports a case where nine relapses occurred, all upon the right side of the body, but not in exactly the same region. The case was in every way exceptional. *Wien. Med. Woch.*, Nos. 25, 26, 1877; abstract in *Lond. Med. Record*, Nov. 15, 1877.

skin disease; but the disease is of much more frequent occurrence than these figures imply.

Etiology.—The causes which occasion the disease are involved in obscurity, although clinical experience teaches that their nature may be quite different. It is, however, well recognized that in all cases the eruption is dependent upon a peculiarly irritable or inflamed state of the ganglia or of the nerve trunks and branches. The cause producing this condition may be found in various influences. Atmospheric changes, especially sudden cold, and exposure to damp winds or wet weather, and the sudden checking of profuse perspiration, have been observed to act as causes. Mechanical violence to a part, injuries to nerves, surgical operations, and unusual exertion, have all been noted to give rise to the eruption.* Arsenic is supposed by some observers to be capable of causing the disease,—a view which was first brought forward by Mr. Hutchinson, of London. Cases are certainly met with where it seems highly probable that the outbreak was due to this agent. Bärensprung† was the first who considered the origin of the disease to be in the nerves, and that the inflammation was conducted through them to the skin.

Pathology.—Bärensprung, moreover, presented the view that the disease was one of the ganglionic system. He determined the primary seat of the affection to be in the spinal ganglia. In cases of zoster of the trunk he found the intercostal nerves thickened and injected, with their spinal ganglia softened and altered in structure, the inflammation always extending from the ganglia to the periphery. Danielssen‡ also demonstrated a marked reddened and swollen condition of an intercostal nerve, accompanied by an infiltration of the neurilemma. Weidner§ records changes not unlike those observed by Bärensprung. Wyss|| gives an accurate

* See Picaud's monograph, *Des éruptions cutanées consécutives aux lésions traumatiques*, Paris, 1875; also Mitchell, *Injuries of Nerves, and their Consequences*, Phila., 1872, p. 153.

† *Die Gürtelkrankheit*, Charité-Annalen, Bd. ix. p. 114. Berlin. This paper is a valuable contribution to the subject.

‡ Bärensprung, loc. cit., p. 119.

§ Berl. Klin. Woeh., No. 7, 1870. *Archiv für Derm. und Syph.*, 4 Heft, 1870.

|| *Archiv der Heilk.*, iv. u. v., 1871. *Archiv für Derm. und Syph.*, 3 Heft, 1872.

description of the changes encountered in a case which died in the early stage of zoster involving the eye and forehead. The first branch of the trifacial nerve was seen to be broader, thicker, and softer than that of the opposite side of the body, and had a reddish-gray color. The individual nerve bundles were separated by a reddish-gray, soft tissue containing numerous vessels. The nerve was surrounded by an extravasation of blood along its course from the orbit to the ganglion Gasseri, this body being considerably larger and softer than normal. It was, moreover, not yellowish-white, but bright red in color. The nerve was healthy at its origin from the brain, but was seen to become diseased as it entered the ganglion, and to contain numerous small blood extravasations. The accounts given by these and other observers of the pathological conditions agree with the more recent studies of Kaposi.* The disease, however, is not in all cases due to inflammation of the ganglia. It may also have its origin at any point along the course of a nerve, and not infrequently originates in the peripheral distribution of the nerve. It may also be due to disease of the spinal cord and perhaps the brain, which, as Kaposi states, would account for bilateral zoster and for the reported cases observed after poisoning by carbonic oxide gas.

The microscopic examination of the skin shows the vesicles to have their seat in the lower strata of the rete. The papillæ and corium are largely infiltrated with serum and with inflammatory cells. The vessels are enlarged, and the bundles of connective tissue more or less separated.† The observations of Biesiadecki‡ and Haight§ may be referred to. They have demonstrated that the vesicles are formed in the same manner as in eczema. Biesiadecki found the papillæ considerably increased in size and filled with new cells, which penetrated into the corium and even into the subcutaneous tissue. The bloodvessels of the papillæ were enlarged and distended with blood. Numerous spindle-shaped cells were seen to come out of the papillæ and to force themselves into the

* *Path. u. Ther. der Hautkrankheiten*, 2te Auflage, p. 322. Wien, 1882.

† See also an interesting report by Kaposi on the pathology of the disease, *Wien. Med. Jahrb.*, 1876, erstes Heft; abstract in *Lond. Med. Record*, April 15, 1876.

‡ *Beiträge zur Phys. und Path. Anat. der Haut*, p. 245. Wien, 1867.

§ *Sitzungsb. der Kais. Akad.* Wien, 1868.

mucous layer, separating themselves freely, so that the epithelial cells were compressed and made to assume the form of narrow perpendicular bands. Haight found numbers of round, nucleated cells in and around the neurilemma; they were probably pus cells. He also discovered the nerves to be swollen, the medullary substance softened, and the axis cylinder eccentrically increased in size.

Diagnosis.—The characters of herpes zoster are usually so well marked that no trouble should arise in the diagnosis. The premonitory symptom of neuralgic pain in the part about to be the seat of the eruption must point strongly to this affection. The appearance of the vesicles, in distinct groups, upon highly inflammatory bases, and the tendency to preserve their form intact, are characteristic. The vesicles are larger than those of eczema, varying in size from a pin-head to a split pea. The lesions of eczema, moreover, always rupture, and ooze forth a fluid which rapidly forms crusts; in zoster there is no discharge. The subjective symptoms of zoster are decided pain, seldom absent, and a burning sensation; in eczema there is positive itching.

Erysipelas should never be confounded with herpes zoster. The line of demarcation about erysipelas, the deep-reddish color of the inflammation, and the constitutional symptoms, together with the absence of grouped vesicles and of neuralgic pain, will serve to distinguish it from zoster.

Herpes zoster is to be diagnosed from the simple form of herpes seen about the face and genitalia, chiefly by the presence of pain and the tendency it has to occur once only in a lifetime. Simple herpes inclines to repeated attacks in the same individual. It also for the most part confines itself to certain regions, as the lips, nose, and genitalia, localities where herpes zoster is not commonly encountered. In simple herpes there is usually only one group of vesicles; in zoster several distinct groups ordinarily occur. Zoster is almost invariably unilateral; simple herpes often shows itself on both sides or on the median line itself.

Treatment.—It will be borne in mind that the affection runs an acute course, terminating in spontaneous recovery; also, that the course is usually a benign one as regards the result, except in those cases where sensitive regions of the body, as the eye, are involved. Internal medication has not heretofore proved of much avail in

influencing the course of the eruption, although, according to Ashburton Thompson* and Bulkley,† we have a valuable remedy in the phosphide of zinc, which has been recommended by the former of these gentlemen in doses of one-third of a grain, to be given at the commencement of an attack and to be repeated every three hours. It is said to control the pain and to abort the eruption. My own experience with the remedy in these cases is too limited to warrant the expression of an opinion; in some cases, however, it has seemed to act well.

General symptoms may be combated as they present themselves. Saline laxatives or effervescing draughts may often be agreeable to the patient in the first stage of severe zoster. Opiates given at night are useful, and may generally be prescribed liberally. The subcutaneous injection of the sulphate of morphia is another valuable method of relieving the pain. In severe cases a course of tonic treatment, consisting of large doses of quinine, iron, arsenic, or the mineral acids, may be beneficially prescribed. External treatment is also of importance and value. The parts should be protected from the irritation of the clothes and from other external influences; the vesicles should not be punctured, but preserved as far as possible intact. Various dusting powders, containing camphor and morphia, may be employed, and the part covered with a bandage. Anodyne ointments, containing powdered opium and belladonna, may also be used. Lotions containing opium, belladonna, camphor, and carbolic acid, fifteen or twenty grains to the ounce, are likewise to be recommended. I have lately used the fluid extract of *grindelia robusta* in the form of a lotion, in the strength of from half a drachm to a drachm to the ounce, with advantage. Painting the lesions with tincture of chloride of iron is well spoken of by Baudon,‡ and more recently by Lailier and Mercier.§ Flexible collodion with morphia, in the strength of ten grains to the ounce, is also of value. The disease may be most advantageously treated by the galvanic current. In many cases it proves a very valuable means of relief. The constant current will be found of most service, applied directly to the seat

* Glasgow Med. Jour., Oct. 1874.

† Arch. of Derm., Jan. 1876, p. 158.

‡ Bull. de Thérapeutique, t. lxiii. p. 75.

§ Thèse de Paris, 1877.

of the eruption and over the course of the nerves by sponge electrodes. I have usually found from five to ten cells to be sufficient, the application being continued for fifteen or twenty minutes at each sitting, and repeated every day, or, if possible, twice a day. There is no doubt that both the pain and the eruption may often be arrested by the timely use of the current, and even after the disease is at its height ease will generally be experienced from its application. The after-pains of zoster may also be treated by the same means.

Prognosis.—A few weeks usually suffice for the spontaneous cure of zoster, although severe cases may linger a month or longer before disappearing. The prognosis will depend upon the gravity of the attack and upon the region invaded. Occurring about the head, the disease is usually severe, and the pain generally intense. Zoster of the orbital region may seriously involve the eye, and prove fatal.

HERPES IRIS.

Syn., Hydroa ; Herpes Circinatus ; *Germ.*, Herpes Iris ; *Fr.*, Hydroa Vésiculeux.

HERPES IRIS IS AN ACUTE, INFLAMMATORY DISEASE, CHARACTERIZED BY ONE OR MORE GROUPS OF VARIOUSLY-SIZED VESICO-PAPULES, VESICLES, OR BLEBS ARRANGED IN THE FORM OF CONCENTRIC RINGS, ATTENDED, AS A RULE, BY THE DISPLAY OF VARIED COLORS.

Symptoms.—The patches vary in size from a small coin to several inches in diameter, and are made up of a number of more or less distinct vesico-papules or vesicles, which arrange themselves side by side so as to form at times a complete ring. Sometimes blebs form. Two, three, or more of these rings exist as a series, extending outwards towards the periphery of the patch. In size the lesions vary from a pin-head to a split pea, or larger, and are discrete or confluent, more often the latter. In number the patches also vary ; two or three or a dozen may be present. Between the vesicles the skin is pinkish or reddish and somewhat raised above the surrounding skin. The vesicles contain a yellowish watery or somewhat puriform fluid, which, after a day or two, dries, forming a slight crust. The oldest vesicles, those in the centre, desiccate first, while new ones on the periphery are being produced.

The affection first shows itself as one or more papules around a central point; these change into vesicles, assuming the shape of a circle. No sooner has one ring been completed than another is observed to appear outside and around it, and perhaps another one around this, until sometimes three or four may be distinguished. Usually the original and central vesicles will have in a great measure disappeared by the time the last crop has formed. The general hue of the eruption is peculiar. The colors are varied and delicate in tint, and generally pervade the whole patch. It is from this circumstance that the affection has received the name *iris*. The colors of the rainbow, subdued in tone, may usually be observed at one time or another in the course of the disease, the red, yellow, and violet shades predominating. The disease is an acute one, and is characterized by the successive appearance of the patches. These continue to come out for from one to three or four weeks, when the process usually ends spontaneously.

Certain regions of the body are attacked in preference; the backs of the hands and feet, and the arms and legs, are the parts commonly involved. Marked symptoms of general disturbance are rarely present at any time during the disease. Itching or burning sensations may exist; but they are seldom pronounced. The course of the affection, anatomically considered, may be abnormal. Blebs may occur in the place of vesicles, or the vesicles may be confluent and form irregularly-shaped blebs. In other cases, the eruption may barely arrive at vesiculation. The concentric arrangement of the successive crops of lesions may also be wanting, especially about the hands. The general features, however, of the disease may usually be recognized. The disorder possesses a tendency to recur in the same person. It is a rare disease. It is not contagious.

Etiology.—*Herpes iris* occurs chiefly in the spring and autumn. It is observed in both men and women, but it is more common in children and young people than in adults. But little is known concerning its nature. There is, however, sufficient clinical proof to demonstrate that, although somewhat formidable at times in its appearance, it is usually a simple disorder.

Pathology.—It undoubtedly bears the closest relationship to *erythema multiforme*. It is, indeed, to be viewed as but an advanced stage or a modification of this disease. From the oppor-

tunities which I have had of observing its course, it seems to me clear that they are one and the same process.* The objective symptoms, however, are so peculiar, and of so different a character from those of erythema multiforme, as to warrant placing the affection among the forms of herpes rather than with the erythemata, particularly as the lesions are of a markedly herpetic nature. It is a benign inflammatory process.

Diagnosis.—The presence of the vesicles serves to distinguish it from erythema multiforme. From herpes zoster it may be known by the absence of neuralgic pain and of burning. The distribution and arrangement of the vesicles are, moreover, altogether different. In herpes iris they are arranged in more or less perfectly formed rings, one outside the other; in zoster they are clustered or grouped irregularly. The regions attacked are, moreover, not the same; the hands and feet are very rarely the seat of zoster. The affection is most liable to be mistaken for pemphigus. But the lesions are unlike those of pemphigus in their size, formation, and course, and in their arrangement. The peculiar coloring of a patch of herpes iris is, moreover, sufficient to distinguish it from pemphigus. It may also be confounded with impetigo herpetiformis. The arrangement of the vesicles, and the absence of marked itching, are sufficient to separate the disease from eczema.

Treatment.—No method of treatment, in many cases, seems to have effect in arresting the course of the disease. Quinine, however, administered in full doses early in the attack, is sometimes of value. Locally, the part should be protected from the clothing, and the vesicles kept intact, and dusted from time to time with a powder of oxide of zinc. If excoriations exist, oxide of zinc ointment may be applied upon a cloth and bound to the limb with a bandage. The disease may also be treated with astringent or sedative lotions, as in the case of acute vesicular eczema.

Prognosis.—This is favorable. The patient may be assured that the eruption will soon disappear, usually in the course of a few weeks. Relapses, however, are to be looked for. In some cases these occur once or even oftener during the year.

* See Erythema Multiforme, p. 154.

MILIARIA.

Syn., Miliaria Rubra; Miliaria Alba; Sudamina (Hebra); Lichen Tropicus; Prickly Heat.

MILIARIA IS AN ACUTE, INFLAMMATORY DISORDER OF THE SWEAT GLANDS, CHARACTERIZED BY PIN-POINT AND MILLET-SEED SIZED PAPULES OR VESICLES, ATTENDED BY PRICKING, TINGLING, AND BURNING SENSATIONS.

Symptoms.—Miliaria may show itself either as a papular or as a vesicular eruption; in many cases both papules and vesicles and intermediate stages are present, although usually one or the other form of lesion will predominate. The two varieties call for separate description.*

MILIARIA PAPULOSA.—This variety, known as LICHEN TROPICUS and PRICKLY HEAT, commonly commences with the formation of numerous minute, acuminate, bright-red papules. The lesions are exceedingly small, pin-head and millet-seed in size, and very slightly raised above the level of the skin. They occur in great numbers; are discrete, although often crowded together; and are usually dispersed, without order in their arrangement or distribution, over a considerable surface. They make their appearance suddenly, and are preceded by and accompanied with more or

* The disease is not to be confounded with "miliary fever," known also as the "sweating sickness," "sudor anglicus," or "English sickness," which first made its appearance in England in the autumn of 1486. By the end of the year it had spread over the whole of England, having caused the death of multitudes of people. It recurred in 1507, 1518, 1529, and 1551. The epidemics varied in intensity. The disease also made its appearance in Germany, Holland, Denmark, Sweden, and Norway. On the continent it received the name of "the great mortality." It disappeared completely for more than one hundred and sixty years, reappearing in the beginning of the last century in France and Italy, and likewise in Germany, Austria, and Belgium. Epidemics have occurred frequently since, one in the autumn of 1880, on the island of Oléron, off the west coast of France, reported by Roehard (*Le Prog. Méd.*, No. 10, 1881). It is of the nature of an ephemeral fever, characterized by no special symptoms except remarkably profuse sweating and the exanthem. The sweating usually appears early in the attack, the eruption, which is identical with that of miliaria, seldom before the third or fourth day. The mortality differs in various epidemics. For a full account of the disease the reader is referred to Zuelzer's article in Ziemssen's *Cyclopædia of the Practice of Medicine*.

less sweating. Vesico-papules and vesicles are usually seen here and there between the papules, rendering the affection somewhat multifiform as regards its lesions.

MILIARIA VESICULOSA.—In the place of papules, vesicles may form. They are very small, seldom being larger than pin-points and pin-heads. They are usually acuminate in shape, rising from the surface in the form of whitish or yellowish minute points. They are generally present in large numbers, thousands of them appearing upon one patch, as, for example, upon the abdomen, and are always discrete. The skin from which they arise is more or less inflamed; commonly it is of a bright-red color, owing to each vesicle being surrounded by an areola (**MILIARIA RUBRA**). The vesicles themselves, when recent, are transparent and contain a transparent fluid; when older they are opaque and yellowish-white (**MILIARIA ALBA**). Owing to the multitude of the vesicles and their proximity to one another, they generally give the skin a yellowish cast. In addition to the presence of the vesicles, there is more or less general sweating. The eruption may show itself in patches here and there, or it may appear over the greater portion of the body. Its usual seat is the trunk, but it may also attack the face, arms, and lower extremities. It is commonly seen about the abdomen, the sides of the trunk, and the back.

The vesicles run an acute course, drying up usually in a few days, and terminating in slight desquamation. They do not tend to rupture spontaneously. If scratched or rubbed, however, they break down and discharge their contents, which form into extremely small, yellowish crusts. Inasmuch as the fluid which they contain is never more than the minutest drop, the crusting is insignificant. The affection may either come to an end in a few days or it may continue in the form of relapses, new crops of vesicles appearing from time to time. Its duration will depend upon the nature of the cause. I have seen cases which lasted throughout the entire summer, and even far into the autumn.

Either variety of the disease may attack all parts of the body, but certain regions, as the abdomen, chest, neck, and arms, are commonly invaded. The disorder makes its appearance suddenly, without premonitory symptoms, and quickly assumes its definite characters; a few hours may suffice for its development. The process varies in intensity; at times it is slight, in other cases it is

so severe as to be the source of much annoyance. It is apt to disappear and to reappear unexpectedly, often without apparent cause. The taking of food or of hot drinks is frequently a sufficient cause to aggravate it, or even to produce an outbreak when there is a disposition to its manifestation. Both varieties are attended by tingling, pricking, burning sensations, which are at times distressing.

Etiology.—It is caused by excessive heat. This may be produced as the result of injudicious and superfluous clothing, or in consequence of a high external temperature. It is very frequently encountered during the summer months in various climates, especially upon the sudden advent of unusually warm weather.* The papular variety is very common in the tropics,—hence the name *lichen tropicus*,—where it is a much more highly developed and serious disorder than with us. It is usually met with in fleshy persons, who perspire profusely, and in children. Those who have had it once are liable to repeated attacks. Too much clothing, flannel or other irritating wear, tightly-fitting under-garments, and bandages, are all to be regarded as exciting causes. The vesicular variety, on the other hand, according to my experience, inclines to manifest itself in weak and debilitated subjects rather than in the strong or stout. It is not rare to meet with it in poorly-nourished, feeble, puny infants and young children, especially in summer, although it is also seen upon these at other times of the year. The superfluous under-clothing with which infants are so often burdened is the cause of much miliaria. In adults I have also observed it in those who were suffering from ill health, nervous prostration, severe dyspepsia, and general debility.

Pathology.—The pathology of the two varieties of miliaria is the same: they are both inflammatory disorders of the sweat glands. In one variety the process inclines to the formation of papules, which have their seat about the orifices of the excretory ducts; while in the other variety the disposition is to vesiculation. The line separating these lesions, however, is in many instances but ill defined, and in consequence there results a mixture of pap-

* In this connection an interesting paper "On Certain Prevalent Skin Diseases of the Summer of 1876," by Dr. E. B. Bronson, may be consulted. *Arch. of Derm.*, Jan. 1877.

ules and vesicles. The process, viewed in its totality, inclines to vesiculation. It may be aptly compared to that which frequently takes place in eczema, where papules and vesicles are produced side by side, differences in individuals accounting for the manifestation of one or the other lesion. Another instance may be cited in acne, papular miliaria being to vesicular miliaria what papular acne is to pustular acne; they are merely varieties or, in some cases, stages of the same process. Congestion, followed by slight exudation, takes place about the ducts with great rapidity, and in a short time gives rise to the minute papules or vesicles, as the case may be, which remain until the cause producing them has been modified, when they quickly undergo absorption.

Diagnosis.—No difficulty should arise in recognizing miliaria, when the nature and seat of the affection are taken into consideration. The papular variety possesses such peculiar symptoms, and is, moreover, a form of disease so common and well known, that it can scarcely be confounded with other affections. It is produced alone by unusual and sudden heat, and consequently is to be looked for, as a rule, only during warm weather. It may be diagnosed from eczema papulosum, the disease for which it is most likely to be mistaken, by its history, course, and subjective symptoms. The papules of eczema, moreover, are larger, more elevated, and firmer than those of miliaria. It makes its appearance suddenly, it may be in an hour's time; eczema, on the other hand, manifests itself, in comparison, slowly. It may continue hours or days, disappearing usually in as rapid a manner as it came. Removal of the exciting cause—heat—tends to relieve the condition, and often to dispel the affection completely.

The vesicular variety is to be diagnosed from sudamen by the presence of inflammatory signs. (See p. 145.) The same kind of difference exists between sudamina and vesicular miliaria as between comedo and acne. The presence or absence of inflammation gives one or the other disease. Sudamina and miliaria, it will be understood, are separated from each other upon purely anatomical grounds, as, for example, is done also in the case of erythema iris and herpes iris, and in other diseases. It is not to be confounded with vesicular eczema, to which it frequently bears a close resemblance in appearance. The history of the disorder, its sudden advent, the accompanying state of general perspiration, together

with the peculiar pricking and burning sensations, will usually be sufficient to distinguish it. In miliaria each vesicle is observed, when sufficiently isolated, to be surrounded by an areola; in eczema the whole surface is more or less uniformly inflamed. The local disturbance is generally much greater in eczema than in miliaria. Miliaria is apt to come and go from day to day, in the form of repeated acute attacks; eczema usually runs a progressive and definite course. Finally, the vesicles of miliaria do not rupture spontaneously; those of eczema almost always do. I consider this a characteristic feature, one which clearly separates the two diseases. Where eczema, however, supervenes, as it may do, upon vesicular miliaria, the case at once is altered; in this event we have all of the symptoms common to vesicular eczema, and the affection is no longer to be regarded as a miliaria. The eruption of scarlatina is at times complicated by the appearance of vesicular miliaria, producing an erythematous, minute vesicular and pustular affection. The diagnosis here is apt to be difficult, especially so if the constitutional symptoms of scarlatina be slight.

Treatment.—The management of miliaria is usually simple. Active measures tend to increase rather than to improve the condition. Irritating washes and all ointments should be avoided, for their employment favors the development of dermatitis or artificial eczema. All precautions for the relief of the sweating are to be instituted. With lower temperature the glands cease secreting excessively; whereupon the condition, in the majority of cases, tends to subside spontaneously. The use of refrigerant diuretics, as the citrate, nitrate, or acetate of potassium, well diluted, will be found of decided value. In the case of the papular variety, the removal of the cause, a cool apartment, absolute rest, light clothing, plain food, acidulated drinks, and saline laxatives will ordinarily insure speedy relief. In the vesicular variety, where new crops of the vesicles continue to appear, constitutional remedies of a tonic character, such as quinine and iron, may be prescribed.

The local treatment is of very decided value. Absorbent dusting powders, consisting of lycopodium or of equal parts of oxide of zinc and starch, will be found most useful; they should be applied freely and frequently. Mild astringent lotions, such as

are useful in hyperidrosis, may be employed in obstinate cases; *lotio nigra*, fluid extract of *grindelia robusta*, freely diluted, lead-water, and like remedies, dabbed upon the parts from time to time, will be of service. A solution of sulphate of copper, ten grains to the ounce, used as a lotion, is a remedy much employed in India for the relief of the papular variety of the disease. Alkaline baths or lotions may also be used with benefit. The patient should be warned against rubbing or scratching the skin, for if this be indulged in the disorder may become greatly aggravated. Under judicious treatment the complaint usually disappears in a short time. Where there is a disposition to a return of the affection, prophylactic measures are to be practised for some time after the attack has passed away; relapses are common. No fears need be entertained concerning danger from retrocession; the sooner the disorder disappears, the better for the comfort of the patient.

Prognosis.—In our climate the disorder is seldom obstinate. If neglected, however, it may pass into dermatitis or into eczema. It is most rebellious in fleshy persons, occurring about the natural folds of the skin, where it necessarily resolves itself into an erythematous or eczematous intertrigo. In children, also, it is a source of discomfort. It is liable to relapse in successive years.

DYSIDROSIS, — POMPHOLYX.—Under the name of dysidrosis Tilbury Fox* described a more or less inflammatory disease, characterized by peculiar vesicles and blebs and an excoriated state of the skin, with maceration and exfoliation of the epidermis. It consists at first of minute, isolated, vesicular points, which are deeply embedded in the skin. They do not incline to rupture. After they have existed for several days, they increase in size and assume a yellowish color, and now resemble small boiled sago grains implanted in the skin. As the process advances, the vesicles become more distended, and elevated above the level of the surrounding skin, finally coalescing, and forming, in severe cases, small or large, irregularly-shaped blebs, showing no disposition to break and discharge. In the course of some days the fluid is poured out or reabsorbed, the epidermis desquamating and leaving an abraded

* Skin Diseases, p. 476. New York, 1873. Also Brit. Med. Jour., Sept. 27, 1873.

surface. The affection, primarily, is not, as a rule, attended with marked inflammatory signs. It occurs upon various regions of the body, with preference for the hands and feet. In its slightest form it is usually confined to the hands, occurring especially upon the sides of the fingers and over the palm. One or both hands may be attacked. After the affection has existed for a while, the epidermis becomes macerated and sodden and the skin is apt to be sore and painful. In severe cases, according to Fox, the eruption may extend itself over the backs of the hands and over the arms, resembling the course of an eczema. The complaint is generally accompanied by itching or burning, which may be slight or severe, according to the extent and gravity of the case. It may continue weeks or months. Relapses from time to time are the rule. Those who suffer from the disorder are generally the subjects of nervous debility, weakness, dyspepsia, and other depressing conditions. It may be mistaken for vesicular eczema. The treatment is to be directed against the general condition of the patient. The local remedies referred to in considering acute vesicular eczema may be employed. The affection is rare in this country.

Much confusion exists as to the nature of the disease. The disorder, according to Fox and Crocker,* has its seat about the sweat glands, and consists in an undue distention of the sweat duct throughout its entire course, followed by a collection of the fluid within the skin. On the other hand, Mr. Hutchinson and Dr. Robinson have likewise described the disease in similar terms, but claim that it is in no way connected with the perspiratory apparatus, and designate it cheiro-pompholyx† and pompholyx,‡ on account of the disposition to appear in the form of blebs, resembling at times pemphigus: neither of these observers, however, regards the affection as related to pemphigus. They consider it a neurosis. It is not improbable that two distinct diseases have been

* Trans. of the Path. Soc. of London, 1878.

† An excellent portrait of this disease may be found in Mr. Hutchinson's *Illustrations of Clinical Surgery*, Fasciculus III., Plate X. London, 1876.

‡ Dr. Robinson has made a careful clinical and microscopical study of the disease, which he regards as identical with the dysidrosis of Fox, and suggests the name of pompholyx as being more appropriate than cheiro-pompholyx. For further information on the subject the reader is referred to this article. *Arch. of Derm.*, vol. iii. No. 4, 1877.

confounded; and it is only by such an explanation that I can account for the discrepancy of the views put forth. I have from time to time encountered a slight form of a vesicular non-inflammatory disease attacking the hands and fingers, which I have always regarded as being due to disorder of the sweat apparatus. This affection, trivial and rare in my experience, I consider a mild form of the dysidrosis of Fox. I am also familiar with the cheiro-pompholyx of Mr. Hutchinson, two well-marked examples of which have within the year been under my observation, but cannot view this affection as in any way connected with the sweat glandular apparatus, or with the disease heretofore regarded by me as dysidrosis. Additional cases and further study are demanded before deciding upon its nature and place in classification.

PEMPHIGUS.

Syn., Germ., Pemphigus; Blasenaussehlag; Fr., Pemphigus.

PEMPHIGUS IS AN ACUTE OR CHRONIC, INFLAMMATORY DISEASE, CHARACTERIZED BY THE FORMATION OF A SUCCESSION OF ROUNDED, IRREGULARLY-SHAPED BLEBS, VARYING IN SIZE FROM A PEA TO AN EGG.

Symptoms.—There are two varieties of pemphigus, presenting symptoms so different in character as to call for separate description. They are named pemphigus vulgaris and pemphigus foliaceus. The former of these is the variety commonly encountered, and is to be regarded as the type of the disease.

PEMPHIGUS VULGARIS.—The disease may attack all portions of the body, and shows a marked tendency to appear without regularity of distribution over the whole surface, no part being exempt. It is most common, however, upon the limbs. It may also attack the mucous membrane of the mouth and vagina. The lesions are blebs from the commencement to the end, and possess marked features. They form slowly or rapidly; at times in the course of a day. Their number may vary from several to dozens; usually a half-dozen or more may be seen at any period during the attack, while at other times much larger numbers occur. In size they vary from a pea to a walnut or a goose's egg; various sizes may generally be observed in a given case.* In form they

* See my Atlas of Skin Diseases, Plate II.

are usually rounded or ovalish, and are elevated in a prominent manner above the level of the surrounding skin, at times as high as an inch. Their walls are generally fully distended with fluid, giving them the appearance of being stretched. They rise abruptly from the sound skin with a definite line of demarcation. In color they are yellowish, the fluid becoming cloudy or puriform as they grow older. Sometimes more or less hemorrhage occurs, giving the lesions a streaked or a distinctly reddish or bluish color. They seldom rupture spontaneously. They incline to no particular arrangement, but appear here and there, either singly or together; occasionally, according to Hebra, they tend to cluster.* But little inflammation attends them, their bases being, as a rule, alone reddened; the surrounding skin is seldom erythematous. Each bleb runs its course in from two or three to six or eight days. A characteristic symptom of the lesions consists in their successive appearance. A crop of them no sooner disappears than others show themselves, and it is in this way that the disease runs its course. Itching and burning occur, as a rule, only slightly, the first of the symptoms being usually the most notable. At times, however, both of these sensations may be present in a marked degree, occasioning great distress (PEMPHIGUS PRURIGINOSUS). Pemphigus in the adult, as a rule, is attended by general disturbance of the system only in severe cases, and in unusual forms of the disease. In children, however, there is always more or less fever and constitutional derangement.

The affection may be either acute (PEMPHIGUS ACUTUS) or chronic (PEMPHIGUS CHRONICUS), the latter course being the usual one. Acute pemphigus, indeed, is exceedingly rare, except in children, where it generally runs its course in two or three weeks. Pemphigus in the adult has an essentially chronic course, often lasting years. The disease usually attacks infants in the form of an epidemic. Such have been reported by Hamolle,† Barthel,‡ Padosa,§ and others; but it is questionable whether certain of

* See Hebra's Atlas of Skin Diseases, Lief. IX., Tafel 7.

† Gaz. Hebdom., Nov. 13, 1874; abstract in Arch. of Derm., Jan. 1875. A report of a similar epidemic in the Lying-in Hospital at Leipzig, from Archiv für Gynaekologie, may be found in the London Medical Record, June 3, 1874.

‡ St. Petersburg. Med. Woeh., No. 1, 1876.

§ Giorn. Ital. d. Mal. ven. e d. Pelle, xi. (1876) p. 30.

these cases at least should not be regarded rather as examples of *impetigo contagiosa*.

The disease may be benign or malignant, according to the condition and health of the patient, hygienic surroundings, diet, and other causes which tend to influence the type of diseases in general. Malignant pemphigus (*PEMPHIGUS MALIGNUS*) is characterized by the great size and number of the blebs. They form rapidly, coalesce, rupture, and are succeeded by excoriated surfaces, which not infrequently take on ulcerative action. Blood may also be poured out, which, in connection with a puriform exudation, collects upon the skin in the form of crusts. The patient's health is always seriously impaired in these cases. Itching and burning may be present in a remarkable degree. If the individual be cachectic, the disease inclines to an unfavorable termination (*PEMPHIGUS CACHECTICUS*, *PEMPHIGUS GANGRÆNOSUS*).

PEMPHIGUS FOLIACEUS.—Here the blebs differ from those of *pemphigus vulgaris* in that they are not distended or tense. They are, on the contrary, flaccid and only partially filled with fluid, which seems rather to undermine the epidermis than to uplift it into blebs. This imperfect formation of the lesions constitutes the chief peculiarity of the affection. They rupture before arriving at a state of full development; or, the epidermis may be so readily detached from the true skin that large, loose, half filled, irregularly-shaped blebs are formed, which soon collapse and rupture. They may, moreover, coalesce, thus involving a considerable surface. Usually the greater portion of the body is attacked, and sometimes the whole surface.* The blebs succeed one another with rapidity and persistence, the same regions, moreover, being the seat of repeated attacks. In this manner large numbers are con-

* I recall the case of a man, some forty years of age, and otherwise in apparently perfect health, who was afflicted with this variety of the disease in its universal form. There was not a square inch of healthy tissue upon his surface, the fingers even being affected. He was a patient in the Vienna General Hospital under the care of Professor Hebra. I noted the course of the disease, from time to time, for a year and a half, at the expiration of which period the man was still in a most distressing state. The continuous plain water bath, in which he lived for months, afforded him more relief than any other mode of treatment. In this country cases have been reported by Sherwell, *Arch. of Derm.*, Jan. 1877; and by Graham, *Canadian Jour. of Med. Sci.*, June, 1879.

tinually forming before the skin has had time to regain its normal state. The fluid dries immediately into thin whitish flakes, which are quickly detached and cast off in quantity; beneath is seen an excoriated, red surface,—the rete and corium. When the disease has existed for a time, the skin presents a white, flaky appearance, the epidermis being loose, shreddy, and ragged. It has been well compared to a superficial scald. The process is invariably chronic, and may continue for years. Sooner or later the general health becomes seriously disturbed, profound prostration supervenes, and the patient may succumb. It is, happily, a very rare form of disease.

Etiology.—Pemphigus is an uncommon disease. It is, I think, of less frequent occurrence in this country than in Europe. According to the statistics of the American Dermatological Association, but 14 cases were encountered out of 16,863 cases of skin disease.* White, in Boston, reports having met with 15 cases out of 5000 consecutive cases of skin disease in dispensary practice, a large proportion of these having occurred in infants.† According to my experience, the percentage in Philadelphia is, I think, even less. It is said to occur in all parts of the world. The causes are obscure. The disease is much more common in children than in adults. After the period of infancy and childhood it occurs at all times of life with about the same frequency. Both sexes suffer in the same proportion. It occurs with equal frequency at all seasons of the year, and does not appear to be affected by atmospheric causes. Articles of food, as a rule, have no influence in its production, although a low and improper diet may determine the disease. The causes in most cases will be found in a low or depressed state of the general system. Not infrequently the nervous system is at fault. Mental depression has been observed to precede the disease. General debility, overwork, and nervous prostration are all to be regarded as productive of the disease. Serious menstrual disorder may prove a cause, and it has been noted to show itself first during pregnancy. The disease is not contagious. Syphilis is never a cause of the disease; it, however, as is well known, occasionally gives rise to a bullous eruption resembling pemphigus, but with a different train of clinical char-

* New York, 1879.

† Bost. Med. and Surg. Jour., March 23, 1876.

acters. The so-called syphilitic pemphigus (PEMPHIGUS SYPHILITICUS) is manifestly a bullous syphiloderm, and not a true pemphigus.

Pathology.—The disease consists in the successive production of blebs, which, according to the observations of Simon and Hebra, differ in no respect, as regards their anatomical structure, from other blebs. Hebra* describes the mode of their appearance as follows. "Sometimes a circumscribed light-red spot appears, perhaps of the size of a bean or large coin; this is paler in the centre, and may even present a tinge of white, indicating the point at which the bleb is to form, and from which it will spread outwards over the surrounding red surface. In other cases the spot, besides being red, is raised above the level of the surrounding skin, and in fact is at first a wheal, passing afterwards into a bleb. In other cases the bleb is not preceded either by a red spot or by a wheal, but begins originally as a small collection of clear fluid beneath the cuticle. Thus hyperæmia of the skin may exist before exudation is poured out, or the latter may be formed before any congestion of the papillary layer is discoverable." The contents of the bullæ are yellowish or colorless, and consist of serum or, in later stages, of a puriform fluid; blood is also occasionally present. The reaction is either neutral or alkaline. The older the fluid the more alkaline it becomes. The blebs, the urine, and the blood have all been submitted to chemical analysis, but without obtaining knowledge as to the more intimate nature of the disease. The relations of pemphigus to impetigo herpetiformis have been considered by Heitzmann,† with the conclusion that they arise from analogous if not identical causes, and that they have to be considered as kindred to each other. My own experience leads me to the same view.

Diagnosis.—No difficulty should be experienced in the diagnosis of typical cases. It must be remembered, however, that the mere presence of blebs does not necessarily constitute pemphigus, inasmuch as these are at times developed in other diseases, as well as by artificial means. But when their appearance together with their course is taken into consideration, and the fact that in pemphigus they occur in crops, the diagnosis may usually be made.

* Loc. cit., vol. ii. p. 388.

† Arch. of Derm., Jan. 1878.

So-called "pemphigoid eruptions," consisting of variously sized and shaped blebs, with or without peculiar features as to number, distribution, and course, are from time to time met with. They are for the most part obscure in their origin and nature, and are difficult of classification; on account of their similarity in appearance in some cases to true pemphigus they are generally spoken of simply as above. As closely allied to and usually confounded with pemphigus, mention must be made of certain cases of so-called impetigo herpetiformis, or herpes impetiginiformis (Hebra), where blebs occur differing but slightly from those of pemphigus.

Herpes iris sometimes bears a close resemblance to pemphigus. The following points of difference may be noted. Pemphigus in the adult is for the most part a chronic affection, continuing for months or years; herpes iris is always acute, running its course usually in a few weeks. In pemphigus full-sized blebs may always be noted; in herpes iris the lesions are usually vesicles, which may attain the size of blebs. The varied colors which attend the vesicles and blebs of herpes iris throughout their course are absent in pemphigus, nor is the surrounding skin in this latter disease usually so inflamed. The vesicles of herpes iris are arranged concentrically, and increase in this manner; the blebs of pemphigus incline to no such arrangement. The seat of the disease in herpes iris—usually upon the arms, backs of the hands, and lower limbs—is characteristic; in pemphigus the disease has no seat of predilection. Impetigo contagiosa, especially in infants and children, may readily be confounded with the disease under consideration, and, as intimated, doubtless many cases of so-called acute pemphigus in children would in reality be found to be instances of this disease.

Scabies sometimes presents large vesicles and even blebs, but the general symptoms and course of the disease will always distinguish it from pemphigus. Pemphigus can scarcely be confounded with eczema. The bullous syphiloderm is to be diagnosed from pemphigus by the fact that it dries into thick, bulky, greenish crusts. Beneath these crusts there exists an excoriation or ulcer, which secretes a greenish-yellow product mingled with blood. Other symptoms of syphilis (in children as well as in adults) may usually be found in connection with the bullous syphiloderm, which

will prevent error as to the nature of the lesion. The blebs of erysipelas can hardly be mistaken for those of pemphigus.

It happens at times that blebs are produced by artificial means on the part of patients, for the purpose of feigning disease. The various stronger acids, especially nitric, dropped or painted upon the skin, cause these lesions to appear, at times, in a perfect manner.* Where such a cause is suspected, the patient should be placed under surveillance, when the deceit, if there be any, will readily be detected.

Treatment.—Both internal and external treatment are of service, but especially the former, which must be directed against the cause. The case should first of all be attentively studied, after which the treatment determined upon should be rigidly enforced. Constitutional remedies are of the utmost importance in all cases where there is general impairment of the health, debility, and prostration. Functional disorders should be inquired after, and the various secretions carefully examined. Arsenic is by far the most valuable remedy which we possess for this disease. In most cases it acts very happily. Its employment should be persisted in. Hutchinson† considers it in the light of a specific. Quinine is also of value, especially in those cases in which the lesions are preceded by fever, and should be prescribed in full doses. Diet and hygiene should also receive due attention. In many cases there is a failure of accustomed health, which is to be restored only by proper nourishment and by attention to hygiene. The food should be of the best quality, and should consist of a full animal diet, including meat, eggs, milk, and cream. Cod-liver oil will also be found of value. Sherwell recommends linseed meal, in ounce doses, with milk, and reports two cases cured.‡ Wine or ale, in proper quantities, may likewise sometimes be directed with benefit. Rest, and freedom from mental distress,

* A case of feigned pemphigus in a young girl, in Guy's Hospital, London, whom I was invited by Dr. Fagge to see, is called to mind. The blebs were numerous, and in appearance differed in no way from those of genuine pemphigus. The artificial nature of the lesions was, however, suspected, and observation subsequently proved that they were produced by nitric acid.

† See *Med. Times and Gaz.*, vol. ii., 1875, pp. 461, 513, 565. A valuable contribution to the subject.

‡ The use of linseed and linseed oil as therapeutic agents in diseases of the skin. *Arch. of Derm.*, Oct. 1878.

are to be secured, and, indeed, everything should be done to make the patient as comfortable as possible both in body and in mind.

The local treatment should always receive attention, for in certain rebellious cases this may for a time constitute the only means of affording relief. The blebs should be punctured and evacuated as soon as they have formed. *Lotio nigra*, *liquor picis alkalinus*, and the fluid extract of *grindelia robusta*, used as in eczema, may all be employed. A dusting powder composed of equal parts of oxide of zinc and starch, or somewhat stimulating dusting powders, as salicylated starch, serve as a useful dressing where the lesions occur over a large surface and in great numbers, and may be applied after one or another of the foregoing lotions has been used.

The bath also offers a most acceptable and beneficial method of treatment. It may be employed either as plain water or in connection with medicinal substances. In some instances the bran, starch, or gelatine bath affords relief. Hebra has used with benefit the corrosive chloride of mercury bath, in the strength of one-third of a grain to the pint of water; also potassa, in the form of a bath, in the strength of half a grain to the pint of water. The tar bath is also recommended.

The best local treatment for grave cases is to be found in the continuous bath, as recommended by Hebra. This consists in permitting the patient to remain in a specially prepared bath-tub for days, weeks, or months, according to circumstances. In the tub are to be placed a horse-hair mattress and pillows, upon which the patient may rest comfortably. The water is to be kept sufficiently warm, and to be changed from time to time throughout the twenty-four hours. Patients will sometimes experience great relief from the bath. They may remain in the water, eating and sleeping and living there, for an almost indefinite period without in any way interfering with the general health.* There are cases, however, in which water does not appear snitable, or in which it is advisable not to use it. In these instances simple ointments may be directed, none being better than either the oxide of zinc or diachylon ointment, applied upon cloths and bound down to the part with bandages.

* For a detailed account of the bath and its action, see Hebra's work upon *Diseases of the Skin*, Trans. of the New Syd. Soc., London, vol. i. p. 320; also, second German edition of the same work (1874), vol. i. p. 273.

Prognosis.—No disease runs a more arbitrary or uncertain course than pemphigus. Relapses are common. In adults the prognosis should always be considered with deliberation. Much depends upon the character of the blebs, their number, and the rapidity of formation. If they are flaccid, imperfectly formed, or hemorrhagic; and incline to rupture, the prognosis is unfavorable. When in large numbers, involving an extensive surface, and characterized by the rapidity and frequency of their formation, the result must in like manner be viewed with caution. Repeated febrile attacks, together with impairment in strength, point to a serious termination. Opinion should in all cases be guardedly expressed, for the disease is one indicating severe systemic disturbance, and in grave cases may end fatally.*

LICHEN RUBER.

LICHEN RUBER IS AN INFLAMMATORY DISEASE, CHARACTERIZED BY PIN-HEAD OR PEA SIZED, FLAT AND ANGULAR OR ACUMINATED, SMOOTH AND SHINING OR SCALY, DISCRETE OR CONFLUENT, RED PAPULES, HAVING A CHRONIC, PAPULAR OR PAPULO-SQUAMOUS COURSE, ATTENDED BY MORE OR LESS ITCHING.

Symptoms.—The disease is one of the most peculiar of the papular group, possessing features which serve to make the process distinctive. Two varieties are met with, viz., lichen ruber planus and lichen ruber acuminatus, the first of which is of much more frequent occurrence in this country than the latter. In lichen ruber planus the papules vary in size from a pin-head to a split pea; where several have coalesced, as occurs in the later stage, they exist in the form of small patches. In shape they differ from other papules, in that they are seldom round but are quadrangular or polygonal in form. They rise abruptly from the healthy skin, above which they are more or less elevated. They are flattened on their summits, and generally show slight umbilication with whitish puncta. To the touch they are firm. They have, in their early stage, a smooth surface, are free of scales, and have a glazed appearance; later, in those cases where the process runs into a

* Fatal cases have been reported by Neumann, Allg. Wien. Med. Zeitung, No. 37, 1876 (abstract in Bost. Med. and Surg. Jour., Dec. 7, 1876), and by T. C. Fox, Med. Times and Gaz., vol. i., 1877.

papulo-squamous stage, considerable desquamation may be present. In color they are dull pink, dull red, crimson, or even purplish, the tint varying with the individual, the age, and the locality. They are usually discrete, though when existing in numbers they incline to coalesce and form patches. They also show a marked tendency to follow the natural lines and elevations of the skin, thus forming longer or shorter rows or bands of eruption. When they run together they lose the characteristics of papules, and assume the appearance of slightly elevated, flattened, more or less uneven patches of infiltration.* In lichen ruber acuminatus, as has been pointed out by Kaposi,† the lesions are smaller, pointed, and scaly. They show no disposition to group, and incline to spread rapidly. This form of the disease is very rare in this country. A case has been reported by Dr. White, of Boston.‡ Cases manifesting intermediate lesions are also not infrequently encountered. Both varieties may, moreover, occur together.

The disease may show itself either in the form of localized areas or as a diffused eruption, involving a large portion of the surface. The localized form is that more usually met with in this country. Here the lesions are generally flat, and consist of one, two, or more aggregations, which may exist either upon a limited extent of surface, as, for example, the forearm, or upon different regions of the body. They may be disseminated or closely crowded together in the form of a solid patch. The diffused form,§ with usually acuminate lesions, may occupy a part or the whole of the body, appearing either as numerous isolated patches or in the form of extensive sheets of eruption. When this takes place, the papules are, as a rule, small, pin-head in size, and scantily covered with minute, thin, whitish scales. This form of the disease, however, in this country not infrequently develops from the flat papule or

* See a lecture on this variety of the disease, by the author, in the Philadelphia Medical Times, April 27, 1878. Cases have also been presented before the New York Dermatological Society; see Arch. of Derm., 1877. A representation of lichen planus may be found in Tilbury Fox's Atlas of Skin Diseases, Plate 13

† Wien. Med. Woch., No. 35, 1877.

‡ Hosp. Gaz. and Arch. of Clin. Surg., Nov. 1877.

§ This variety of the disease constitutes the Lichen Ruber of Hebra, as first described by him, and is chiefly encountered in Austria. See his Atlas of Skin Diseases, Lief. III., Tafel 2.

from the intermediate lesions above referred to. Itching is generally present in both varieties, and may be either slight or severe.

Lichen planus commonly presents itself upon the extremities; lichen acuminatus upon the trunk. Lichen planus is perhaps most often encountered about the forearms, and especially upon the flexor surfaces of the wrists. It is also often met with on the backs of the feet. It occurs also sometimes on the palms and soles, and on the penis. It has, moreover, been met with upon the tongue, hard palate, and gums, as in the cases reported by Neumann and Pospelow.* It is generally more or less symmetrical. As stated, it frequently appears in the form of rows, or of short or long, narrow or broad bands, and occasionally as though following nerve tracts. The course of the disease is slow, months sometimes elapsing without there being appreciable change in the lesions, while the process may continue for years. In other cases, however, in this country, the course is much more rapid. New lesions, as a rule, appear from time to time. As the papules disappear they are succeeded by violaceous, dark-red or brownish-red pigmentary stains, which, as a rule, are remarkably persistent. This pigmentation, even in the case of discrete lesions, is usually marked. The severe form, as described by Hebra, runs even a more chronic course, and is attended by a train of serious symptoms, including constitutional disturbance, marasmus, and, at times, a fatal termination. Such cases, however, are very rarely encountered in this country.

Etiology.—The causes are in many instances obscure. Wilson † is of the opinion that the disease is associated with symptoms of constitutional derangement connected with errors of digestion and nutrition,—a view which is also entertained by Taylor.‡ Patients, according to my experience, will generally be found to be suffering from debility arising from improper nourishment, overwork, nervous depression, and similar conditions. Nervous symptoms are often prominent. T. Colcott Fox § speaks in favor of its neurotic origin. Its occurrence in bands, as above stated, lends support to

* Abstract in Lond. Med. Record, Feb. 15, 1881.

† Diseases of the Skin, London, 1867, p. 192.

‡ Arch. of Derm., vol. i. No. 1.

§ Brit. Med. Jour., Aug. 23, 1879.

this view. The disease occurs at all periods of life, but is more frequent during middle age. It may also occur in children. According to my experience, and that of Hutchinson,* it is more common in women than in men. Kaposi, on the other hand, has found it more common in men.† It is a comparatively rare disease in this country. According to Wilson, it is not uncommon in England.‡

Pathology.—The disease is to be regarded as an inflammatory process of a chronic nature, accompanied by considerable alteration in the structure of the skin. It is in all cases, and throughout its course, a papular manifestation. Microscopical studies have for the most part been undertaken upon chronic cases. According to Neumann§ and Biesiadecki,|| the disease involves nearly all the layers of the skin as well as the sebaceous glands and hairs. The cells of the epidermis are accumulated in great quantity, and contain fine granular matter. The rete is highly developed over and around the œdematous papillæ, which contain enlarged bloodvessels, along the course of which there exists an abundant proliferation of cells. Biesiadecki is of the opinion that each papule in its general structure consists of two parts, a central, atrophic portion, corresponding to the umbilication which is frequently observed clinically, and a peripheral, succulent, œdematous portion, and that these features distinguish the papules under consideration from those of other diseases. Interesting changes are also noted by both the observers quoted, and by Kaposi, in connection with the roots of the small hairs, which are seen to terminate abruptly in the form of tuft-like expansions. The root-sheaths are also found to be greatly hypertrophied around the roots of the hairs, and to be distended by cell infiltrations to such an extent as to form knotty, club-shaped

* Lectures on Clinical Surgery, London, 1879.

† Path. und Ther. der Hautkrankheiten, p. 403. Wien, 1880.

‡ See a valuable paper by Mr. Wilson, reporting a large number of cases, in the *Journal of Cutaneous Medicine*, vol. iii. No. 10, 1869. Mr. Wilson was the first to describe the disease in England, and gave to it the name *Lichen Planus*.

§ Loc. cit., p. 238.

|| Untersuchungen aus dem Path.-Anat. Institute in Krakau, p. 32. Wien, 1872.

extremities. The disease frequently has its starting-point about the follicles.

According to the studies of Crocker,* the process is entirely superficial in the beginning, consisting of an inflammatory effusion from the superficial plexus of vessels. All the vessels of this plexus are notably dilated and the papillæ enlarged by the growth of the interpapillary processes of the mucous layer downwards. All of the epithelial layers undergo proliferation, those of the mucous layer taking the most prominent part in the formation of the papule. The involvement of the hair-follicles, according to Crocker, is not an essential, nor even the main, feature of the process in most cases, the sweat ducts more often determining the position of the papule.

Diagnosis.—Lichen ruber may be mistaken for the papular syphiloderm, lichen serofulosus, psoriasis, and eczema papulosum. In the plane variety the irregular, angular outlines of the lesions, together with their flattened, slightly umbilicated, smooth or sealy summits, and dull red color, will, however, be points sufficiently distinctive to separate the disease from these affections. The papules of eczema papulosum, to which they bear the greatest resemblance, are roundish, somewhat acuminate, brighter red in color, usually intensely itchy, and possess a history different from that of the papules of lichen planus.

Treatment.—A general tonic and supporting treatment is demanded in the majority of cases. Arsenic is the most valuable remedy, and may be regarded almost in the light of a specific. The dose, at first small, should be increased from time to time, and the use of the remedy persisted in. Köbner† recommends its employment in the form of hypodermic injections, using one part of Fowler's solution and two parts of water, beginning with four or five minims of the mixture. The preparations of iron, and cod-liver oil, are also useful. The sooner in the course of the disease treatment is instituted, the more speedy will be the cure; cases of long standing are often found to be exceedingly obstinate, continuing for long periods but slightly influenced by remedies which

* *Lancet*, vol. i., 1881.

† *Deutsche Med. Woch.*, Jan. 1, 1881. Abstract in *New York Med. Jour.*, vol. i., 1881, p. 614.

in an earlier stage would have afforded relief. Hygienic measures, adapted to the requirements of the case, will be found to aid in bringing about a favorable result. Everything should be done to improve the general condition of the patient.

Locally, inunctions with simple ointment, petroleum ointment, or tar ointment; alkaline lotions, and tar baths; carbolic acid and thymol lotions, varying in strength from half a drachm to two or three drachms to the pint; liquor picis alkalinus, diluted; corrosive sublimate in the form of a lotion; and dilute hydrocyanic acid with water, may all be employed. Where the itching is a prominent symptom, I am in the habit of using a carbolic acid or thymol lotion with alcohol and a small quantity of glycerine, as in eczema, followed by a mild mercurial ointment. In addition to these, the various more stimulating remedies useful in eczema may be prescribed with the hope of success.

Prognosis.—This will depend upon the severity of the case, the amount of surface involved, and the duration of the disease. Where the lesions are localized and not extensive, the prognosis is favorable. In the diffused form the disease is generally rebellious. In severe cases, according to Hebra, marasmus and a fatal termination may take place. The disease is rarely so severe with us as in Germany.

PRURIGO.

Syn., Germ., Prurigo (Hebra); Juckblattern; Fr., Strophulus Pruriginieux (Hardy); Serofulide Boutonneuse Bénigne (Bazin).

PRURIGO IS A CHRONIC, INFLAMMATORY DISEASE, CHARACTERIZED BY DISCRETE, ROUNDED, SMALL SPLIT-PEA SIZED, SOLID, FIRMLY SEATED, SLIGHTLY RAISED, PALE-RED PAPULES, ACCOMPANIED BY GENERAL THICKENING OF THE SKIN AND INTENSE ITCHING.

Symptoms.—The disease commences by the gradual formation of small, firm elevations, which have their seat in the skin itself, appearing to be situated beneath the epidermis. At first they are often so slightly elevated as to escape being seen, but they may usually be felt by passing the finger over them. When fully developed they are rounded, raised only to a very slight extent, and about the size of a millet seed or small split pea. They are firm in consistence, and may be detected by the finger as well-defined inflammatory deposits in the skin. They exist discretely, although

often in close proximity to one another. They are never grouped, but are more or less irregularly distributed. In color they are pale red or like that of the normal surrounding skin. They are frequently covered with a scanty, dry, shrivelled epidermis, but seldom to the extent of scales. They are often perforated by small hairs.

The eruption is accompanied by intense itching, which symptom manifests itself early and remains present throughout the course of the disease. It is usually of so violent a nature that the patient is unable to desist from scratching, and consequently lacerates the lesions generally before they have completely formed. From repeated and protracted scratching the summits of the papules become torn, and ooze a small quantity of bloody serum which dries into a crust. Hence, at all times blood crusts are present, and constitute marked secondary lesions. As the disease progresses, the itching and scratching increase to such an extent that excoriations result. In course of time a peculiar thickening of the skin takes place, attended by a harsh condition of the surface, which is characteristic of the disease, and in severe cases may be recognized by the touch. It is invariably most marked about the lower extremities. The hairs here are seen to be either broken off short or to be torn from their follicles, the result of scratching. More or less pigmentation is also usually present.

The disease has its seats of predilection, attacking by preference the extensor surfaces of the lower extremities, especially the region of the tibiæ. The arms, particularly the forearms, are next invaded, and finally the trunk. The head is rarely if ever attacked; the palms and soles never. In severe cases, owing to the great irritation and consequent scratching, the glands of the inguinal region become symmetrically enlarged and constitute "prurigo buboes," as Hebra has termed them.

The disease almost invariably appears at an early age,—according to Kaposi, within the first or second year,—and in the form of an urticaria. It runs a chronic course, lasting usually throughout life. Eczema or simple dermatitis may at times be called forth by the inordinate scratching, as well as by the strong cutaneous irritants and caustics which are often used for the relief of the disease.

Etiology.—The disease is extremely rare and almost unknown

in the United States.* It is only occasionally encountered in France and England,† but is common in Austria, where it may be said to have its home. It is not hereditary, although it always shows itself at an early age, generally before the tenth year; nor is it contagious. According to Hebra, it is more often encountered among males than among females. It is for the most part a disease of the poor. Its causes are to be found in impoverished conditions of the system, occasioned by bad food, improper hygiene, and general neglect. Hebra justly remarks that "it undoubtedly occurs almost exclusively in poor subjects and those ill nourished in childhood, and so most often in foundlings and beggars' children. Those who have enjoyed a good physical education in early youth, and have always been properly fed according to their age, suffer very rarely indeed from prurigo." Occasionally, however, it is met with in the upper classes. The disease is better in summer than in winter. After what has been said, it is scarcely necessary to state that it is never produced by pediculi or other parasites.

Pathology.—The microscopic anatomy of the prurigo papule has received study at the hands of Hebra, R. H. Derby,‡ Neumann,§ Gay, and Kaposi.|| The results, however, do not show that the process possesses distinctive anatomical features. The lesions differ but little from those of papular eczema. The views of Neumann and Gay are alike as to the origin of the disease: both these observers hold that the process begins in the papillary

* Two cases occurring in this country will be found in the American Journal of Syphilography and Dermatology, vol. iv. p. 21, 1873, recorded by Wigglesworth, of Boston, and in the Archives of Dermatology, vol. iv. No 2, 1877, by Campbell, of New York.

† Among many thousand cases of skin disease which I had, some years ago, the opportunity of observing at the Hôpital St. Louis, Paris, one case only of the prurigo of Hebra presented itself. It occurred in a lad about sixteen years of age, and was a marked example of the disease. Prof. Hardy, who was present, informed me that he designated the affection *Strophulus Prurigineux*. In London, among a large number of cutaneous diseases as met with at the various special hospitals and dispensaries, I do not recollect seeing a single case.

‡ Sitzungsber. der Kais. Akad. d. Wissenschaft. Wien, Febr. Heft, 1869.

§ Archiv für Derm. und Syph., Erstes Heft, 1871. Transl. in the Amer. Jour. of Derm. and Syph., vol. ii. p. 261.

|| Loc. cit., p. 445.

layer, the papule being formed by a circumscribed accumulation of young cells, with a certain amount of structureless fluid exudation. As the disease progresses, the epidermis and rete become highly developed and more or less pigmented. In chronic cases the whole papillary layer and the corium are hypertrophied and greatly thickened by the formation of a firm connective tissue; the sweat glands and the vessels enlarged; the outer root-sheath increased considerably in size, and the hair-follicles expanded in the form of a club.

Diagnosis.—If the peculiar features of prurigo be borne in mind, no difficulty can arise in its diagnosis. It will be seen that a distinct, clearly-defined disease has been described, which bears no relation whatever to either of the affections with which prurigo has long been confounded,—namely, pruritus and pediculosis. By reference to these latter diseases, their characters will be noted to be very different from those of prurigo. It will also be remembered that prurigo is an exceedingly rare affection in this country. Prurigo may be diagnosed from pruritus by the presence of the papules, which are primary; in pruritus no papules exist, except those produced by scratching, which, of course, are secondary. Blood crusts exist in both prurigo and pruritus; they are, however, much more numerous in prurigo, and are seen to be seated about the summits of the torn and wounded papules. Prurigo is always attended with remarkable thickening of the skin, which is rarely the case in pruritus. The peculiar harshness of the skin in chronic prurigo is characteristic, and never occurs in pruritus. The regions attacked in prurigo are different from those usually invaded by pruritus; in the former disease the extremities, more especially their extensor surfaces, are involved, while in the latter the trunk or all parts of the body may be affected. The itching of prurigo is more intense and more constant than that of pruritus, and is relieved only by means which act upon the papillary layer of the skin itself, as, for example, violent scratching or caustics. Prurigo continues throughout life; pruritus runs a very variable course, and frequently disappears, with or without treatment. Prurigo is seen almost exclusively upon the poorly nourished and ill fed; pruritus is often encountered upon those who are in good general health, having its cause frequently in some functional derangement of the economy.

Prurigo should not be confounded with pediculosis. The two diseases have nothing in common. Pediculi are never present in prurigo; they are the sole cause of pediculosis, and consequently are always present. Small papules, due to scratched and inflamed follicles, covered with blood crusts, are at times seen in pediculosis; but these are very different from the papules of prurigo, both in appearance and in course. The so-called papules of pediculosis are due to the wound of the pediculus, and the subsequent scratching of the part.

Prurigo may be confounded with eczema. As already stated, eczema may exist as a complication, especially when the prurigo is severe; in this event the disease will be found to remain after the eczema has disappeared. Examples of disease, however, are occasionally met with in this country partaking of the nature of both prurigo and eczema, the diagnosis in these cases being difficult.* The two diseases, as a rule, however, are so different as not to permit of confusion.

Treatment.—From a consideration of the cause of the disease, it will be evident that immediate attention is to be directed to the general condition of the patient. The diet should be generous. Hygienic measures and everything that will tend to improve the state of the patient's health are to be taken into consideration. Iron, arsenic, quinine, and especially cod-liver oil may be prescribed. Great benefit is to be derived from external remedies, chief among which are to be mentioned the various kinds of baths. Tar and sulphur are the two most valuable remedies. Wilkin-

* It will be observed that the author differs in his ideas of prurigo from the majority of English and American writers. The disease, as described, is a marked one, possessing a peculiar clinical history, and is entitled to be clearly separated from the other affections with which it has long been confounded. Prurigo, pruritus, and pediculosis are three very different diseases; and yet one has but to turn to the literature of the day to find sad confusion. The difficulty has arisen from the fact that prurigo, as described by German writers, is an affection so rare in England and the United States as scarcely to exist in these countries, and is consequently unknown to observers. Both pruritus and pediculosis of the body, however, are often attended by the formation of hyperæmic elevations (especially about the follicles), followed by blood crusts from scratching, which lesions have erroneously been termed the papules of prurigo. In this manner, through complications, have the names of these three diseases been used interchangeably.

son's ointment, as modified by Hebra,* may be used, and is highly spoken of by Hebra, Kaposi, and Neumann.†

Prognosis.—The disease is a very rebellious one, usually lasting years or a lifetime. It is said to be curable in the child, but scarcely so when it has lasted until adult life.

LICHEN SCROFULOSUS.

LICHEN SCROFULOSUS IS A CHRONIC, INFLAMMATORY DISEASE, CHARACTERIZED BY MILLET-SEED SIZED, FLAT, REDDISH OR YELLOWISH, MORE OR LESS GROUPED, DESQUAMATING PAPULES, UNACCOMPANIED BY ITCHING, OCCURRING IN THOSE OF A SCROFULOUS DISPOSITION.

Symptoms.—The papules are always small; never larger than pin-heads. They are pale red, reddish, or yellowish in color; at times, owing to the accumulation of minute scales upon their summits, they present a grayish aspect. They show more or less disposition to group, forming roundish or crescentic patches of various size in different parts of the body, which when they have existed for some time are usually covered with minute whitish scales. The lesions when examined closely are found to have their seat about the hair-follicles. They are accompanied by little or no itching. The disease occurs chiefly on the trunk, more especially about the regions of the chest and abdomen, more rarely on the limbs. Its course is chronic, the individual lesions being slow to undergo involution; it may last for years, old papules gradually disappearing and new ones taking their place. The skin is generally dry, somewhat harsh, and of a yellowish hue.‡

Etiology.—The affection is certainly very rare in this country; in my experience it is unknown. A case is reported by F. J. Shepherd, of Montreal.§ It is most frequently encountered in Austria, where it was originally described by Hebra. Its cause is found in the scrofulous habit, nearly all in whom the disease is observed being affected with glandular enlargements, ulcers, or

* See formula in the chapter on Scabies.

† For detailed description of the various methods of treatment employed for this disease, see Hebra's interesting account as given in his work.

‡ A representation of the affection under consideration may be found in Hebra's "Atlas der Hautkrankheiten," Lief. III., Tafel 3.

§ Canada Med. and Surg. Jour., Dec. 1880.

bone disease. According to Kaposi, this general cachexia is present in about ninety per centum of the cases.* It is encountered in young people, and more particularly at the age of puberty. In Hebra's experience it occurs much oftener in males than in females.

Pathology.—The anatomy of the lesions, excised from the living subject, has been studied by Kaposi,† as follows. Each papule has its seat about the opening of a hair-follicle. The pathological process is an inflammation and cell-infiltration in and about the hair-follicles, sebaceous glands, and papillæ around the apertures of the follicles. The inflammation, Kaposi holds, commences at first around the vessels and at the bases of the follicles and glands, and later invades the interior of these structures. The cells collect within the follicles and glands, to such an extent as to distend them greatly, thus forming the papules, and finally cause separation of the hairs from their sheaths. The process may disappear without leaving cicatrices, or, on the other hand, it may be followed by pit-like, atrophic depressions at the seat of the follicles.

Diagnosis.—The affection is not to be confounded with eczema papulosum, from which it materially differs in not itching. It is also to be distinguished from lichen ruber, from the small papular syphiloderm, and from keratosis pilaris, to which disease especially it bears likeness.

Treatment.—The disease always yields to treatment. Cod-liver oil, taken internally and applied externally, is the remedy recommended, which, according to Hebra, never fails in relieving the condition.

ACNE.

Syn., Acne Vulgaris; Aene Disseminata; Varus; Stone-pock; Whelk;
Germ., Finnen; *Fr.* Aené; Aéné Boutonneuse

ACNE IS AN INFLAMMATORY, USUALLY CHRONIC, DISEASE OF THE SEBACEOUS GLANDS, CHARACTERIZED BY PAPULES, TUBERCLES, OR PUSTULES, OR BY A COMBINATION OF THESE LESIONS, USUALLY IN VARIOUS STAGES OF DEVELOPMENT, OCCURRING FOR THE MOST PART ABOUT THE FACE.

Symptoms.—Aene may appear alone, as a well-defined disease,

* Loc. cit., p. 396.

† Lehrbuch der Hautkrankheiten, Hebra und Kaposi. Erster Band, Zweite Auflage, 1874, p. 385.

or it may exist in connection with other affections of the sebaceous glands, as, for example, comedo and seborrhœa. It shows itself in the form of pin-head to pea-sized elevations, situated around the openings of the hair-follicles and sebaceous glands, which may be papular, tubercular, or pustular in their nature. Usually the disease exists exhibiting both papules and pustules in all stages of development, from the incipient inflamed gland to the same in its suppurative stage. They are more or less acutely inflammatory, but are seldom accompanied by burning or itching. Exceptional cases, however, are occasionally encountered. In color they are bright or dark red or violaceous, with usually a central suppurating point. The number of lesions present varies extremely; there may be only two, three, or half a dozen, or, as is usually the case, there may be a large number. The inflammation may be superficial, or it may extend deeply into the glands, occasioning considerable swelling and disturbance; sometimes abscesses are formed. The inflammation may, moreover, be acute or chronic, running its course either rapidly, in a few days' time, or sluggishly, lasting weeks. The disease, taken as a whole, is almost always chronic in its course, crops of papules and pustules appearing from time to time, the process frequently continuing for years. According as the disorder has been more or less suppurative will cicatrices remain, which may be slight or disfiguring.

Acne may occur upon any portion of the body except the palms and soles, but it has decided preference for certain regions. Its common seat is about the face; it is also frequently seen upon the neck, shoulders, and back. It occurs upon all parts of the face, and in particular about the forehead, cheeks, and chin. In some cases the shoulders are attacked at the same time with the face. Occasionally it is encountered in a disseminate form over the trunk, arms, and thighs, to the exclusion of the face. The eruption does not show itself with any regularity of distribution. It is, however, usually symmetrical. It varies greatly as regards development and general appearance, constituting either a slight disorder or a grievous disturbance attended by serious disfigurement. It is one of the commonest diseases of the skin. It occurs chiefly in young people of both sexes, appearing ordinarily at the age of puberty. It rarely shows itself before this period of life, and seldom is present after mature years. Sometimes,

however, it first makes its appearance later in life. The varieties of acne may now be referred to, which are made according to the anatomical lesions usually observed.

ACNE PAPULOSA.—This consists in the formation of pin-head or pea sized more or less acuminate papules. They are usually small, sometimes miliary in size, partaking somewhat of the nature of comedones, with which they are often associated. The amount of inflammation is usually slight. A whitish or darkish point may frequently be seen in the centre of the papule, which has given rise to the term **ACNE PUNCTATA**, indicating the opening of the sebaceous gland duct. They generally exist in numbers, scattered over various parts of the face, their commonest seat being the forehead. Here and there will usually be found papulo-pustules, and even pustules, in various stages of evolution. Acne papulosa is the least-developed variety of the disease.

ACNE PUSTULOSA.—This is the typical variety. It may occur in all degrees of development, from pin-head to split-pea sized lesions. All acne tends to assume this form, but it rarely happens that the process is entirely pustular, intermediate lesions, as papules and papulo-pustules, usually asserting themselves. The amount of suppuration varies; it may be slight or abundant. The pustules, as a rule, form rapidly, and terminate either in discharge of their contents by mechanical means or in absorption and desiccation. In shape they are rounded or acuminate, and are surrounded by a deep-seated or superficial inflammatory product. According to the amount of this peripheral inflammation will the pustule have an insignificant or a hard base; when it exists in a marked degree the condition is known as **ACNE INDURATA**, in which the subcutaneous connective tissue becomes involved, in some cases to such an extent as to occasion considerable swelling. This is frequently met with about the submaxillary region. The terms **ACNE ATROPHICA** and **ACNE HYPERTROPHICA** have been applied to designate the results of acne in certain cases; the process in the first instance being followed by marked atrophy about the ducts of the glands, in the form of pit-like depressions, and in the latter by connective-tissue hypertrophy about the glands. Occasionally the sebaceous matter at the summit of the pustule becomes firm or even hard, in which case the disease is known as **ACNE CORNEA**.

ACNE ARTIFICIALIS.—Under this head it is in place to speak of several kinds of acne which are produced by medicinal substances, either taken internally or applied externally. In some persons tar used externally at times causes an inflammation of the sebaceous glands. It is observed especially upon those who work in tar. It is characterized by a blackish point, a deposit of tar, in the centre of the pustule. With the condition there exists more or less inflammation of the whole skin. The preparations of iodine and bromine taken internally are also frequently productive of glandular disorder. The eruption at times is of a serious nature, resulting in the complete involvement and destruction of the sebaceous structures. The subject will be referred to more at length in connection with the subject of the medicinal eruptions.

Etiology.—The causes which may give rise to acne are numerous, and are very different in their nature. The disorder may be occasioned by agencies operating directly upon the skin, or, as is much more frequently the case, by causes remote from the seat of the disease. Before mentioning these, it is in place to refer to certain facts which observation has furnished. Acne is encountered in both sexes, in about the same proportion. It is more common in individuals who have light complexions than in those who have dark skins. The most frequent cause of acne is puberty. The affection first shows itself at this time of life, and is apt to continue until the system has reassumed a condition of repose. It is at this period that the sebaceous glands everywhere are unusually active. The hairs also now begin to develop, and necessarily determine increased cell growth about the follicles. The whole sebaceous system undergoes a great physiological change, which may occur quietly without occasioning disorder, or, as is frequently the case, may be of so violent a character as to give rise to any of the several functional diseases of the glands, and notably to acne.

Among the causes which sometimes are observed to be productive of the affection, scrofulosis and general debility of the skin may be mentioned. Under this latter head may be grouped all those abnormal conditions arising from imperfect physical development, improper nutrition, and other defects of the economy, whether organic or functional. The disease occurring from such causes is generally of the pustular variety, and is called

CACHECTIC ACNE. In this connection anæmia and chlorosis may also be mentioned as causes, both of these conditions favoring the development of functional disease of the sebaceous system. Atony of the unstriped muscular fibres in the skin, which, as is well known, act directly on the sebaceous gland, must also be regarded as a cause of the disorder.

One of the most common causes of acne is to be found in habitual derangement of the alimentary canal. Experience with a large number of cases teaches this in most emphatic language. Disorders of the stomach and bowels, including dyspepsia and constipation, are to be considered as among the most frequent and potent causes of the disease. In some cases, even slight derangement of the bowels is sufficient to bring forth the lesions, which will be observed to become better or worse as the internal condition is improved or neglected.

Uterine disorders, particularly those of a functional character, are also to be viewed as the origin and direct cause of some cases of acne. Instances there are also, and it must be confessed they are not rare, in which it is extremely difficult, if not impossible, to find the source of the disease, the patient appearing to be otherwise in a perfect state of health. In addition to the causes enumerated, acne may result, as already stated, from the internal use of certain medicinal substances. Iodine and bromine are both frequently the cause of an acne-form eruption, which sometimes differs but slightly from ordinary acne. Among external agencies, tar likewise at times causes an acne-form, inflammatory condition of the glands and follicles.

Pathology.—Concerning the anatomical nature of acne there can be no question. The process originates and has its seat in the sebaceous glands and follicles of the skin. It is an inflammatory disease, involving the gland structure and the tissue surrounding it. The process for each individual papule or pustule is for the most part an acute one, running a definite course and terminating either in absorption or in suppuration. The first stage in the formation of the lesion consists in a retention of the secretion. This is soon followed by hyperæmia and exudation about the gland and especially in its walls. The connective tissue about the gland now becomes infiltrated with cells and takes on more or less active inflammation, which sooner or later, as a rule, results in

suppuration. Cornil* finds the changes in simple acne pilaris to be distention of the follicular cavity with epidermic cells, and in the severer cases with a greater or less admixture of pus cells, small purulent collections in the rete mucosum, and congestion of the vessels surrounding the follicle. The intensity of the inflammation varies; if active, both the gland and the follicle may perish, leaving ultimately a cicatrix. The amount of inflammation present determines the two varieties of acne described, as well as at times certain other accompanying anatomical peculiarities, such as induration and hypertrophy.

Diagnosis.—The chief characters and the history of acne are so well defined in the majority of cases as to occasion no difficulty in diagnosis. The age of the patient, the locality attacked, the anatomical seat of the complaint, its chronic course, and the fact of the lesions appearing and disappearing within a short period, together with their inflammatory nature, are points to be borne in mind in doubtful cases. Difficulty may sometimes arise in the recognition of artificial acne. That caused by tar may be known by the presence of this substance about the patient, which may be detected by its peculiar odor, and the blackish points at the openings of the follicles. The acne of iodine and bromine is highly inflammatory, is seen upon all parts of the body, and is generally extensive and virulent. The bromine acne especially is sometimes characterized by variously-sized areas of inflammation, which at times become covered with sebaceous crusts.

Acne often bears a close resemblance to the papular and pustular syphiloderms, from which it must be distinguished by its history, by the absence of the various signs of general syphilis usually accompanying the syphilodermata, by its course, and by other peculiarities. Acne is usually scattered quite uniformly over the region attacked; the lesions of syphilis tend to group. The disease occurring upon the forehead alone occasionally requires careful study to distinguish it from syphilis. Severe cases of acne may at times resemble variola in appearance, although error in diagnosis can scarcely occur.

Treatment.—This may properly be considered under two heads, constitutional and local, both of which forms will be found of

* Journal de l'Anatomie, etc., 1879.

service. They should, in the majority of cases, be employed conjointly. With all the means at our command, the disease often proves rebellious. At the same time, the disorder is, in my opinion, by no means so obstinate as is commonly supposed.

CONSTITUTIONAL TREATMENT.—Before entering upon active treatment it is necessary that the physician make himself thoroughly familiar with the constitution and habits of his patient. It is impossible to treat acne satisfactorily without a clear understanding of the causes which are at work in producing the disorder. It must be remembered that it is a functional affection, and that therapeutics must be directed against the cause rather than against the individual papules or pustules, for these tend to disappear spontaneously. It should be the aim of the physician to prevent the disease from appearing. It is on this account that internal treatment is frequently found to be of much greater value in effectually disposing of the disease than external applications. If a case be watched in its course through a period of months, it will often be observed how closely the acne follows the general condition of the health.

Various causes will be found to occasion the disease. It must, however, be borne in mind that the same cause, even if present, will not be productive of the disease in every individual. Disorders of one kind or another of the alimentary canal are in the first place to be inquired after. Dyspepsia, in its many forms, is one of the most prolific sources of acne; under this term are included irregularity of the bowels, constipation, flatulence, acidity, coated tongue, and other similar symptoms. Too much attention cannot be directed to the functions of the stomach and bowels, for derangement of these organs will be found to be at the bottom of many cases. To correct these difficulties is often extremely difficult, requiring all possible skill, and it is in these cases that an accurate and thorough knowledge of general medicine, together with complete familiarity with the action of drugs, proves invaluable to the physician. If constipation exist, saline or vegetable laxatives should be prescribed, in sufficient quantity to open the bowels once or twice in the day. An occasional dose of blue pill or of calomel will sometimes prove beneficial. In some cases aloes and iron may also be prescribed. Where there is a furred tongue, and disorder of the stomach as well as of the bowel, excellent

results may be obtained from an acid aperient mixture containing the following:

R Magnesi Sulphatis, \mathfrak{z} iss;
 Ferri Sulphatis, gr. xvi;
 Acidi Sulphurici dil., $\mathfrak{f}\mathfrak{z}$ ii;
 Aquæ Menth. Piperitæ, $\mathfrak{f}\mathfrak{z}$ viii.
 M.—Sig. Tablespoonful in a gobletful
 of water as directed.

This preparation should be taken once a day, preferably a half-hour before breakfast. In some cases it may be prescribed twice daily, before breakfast and before tea. Where a vegetable bitter is desired, infusion of quassia or of eolumbo or compound infusion of gentian may be employed in the place of water. The natural mineral waters are also valuable. The Saratoga waters, particularly the Hathorn and Geyser springs, as well as the German Friedrichshall, Ofner Rakoezy, and Hunyadi János waters, cathartics, will be found desirable and efficient, taken before meals. Together with these saline laxatives, it is often of advantage to direct some one of the ferruginous preparations.

The preparations of sulphur, especially the sulphide of calcium, in from one-tenth of a grain to one-half of a grain, four or five times daily, as recommended by Ringer, will be found valuable. They sometimes succeed where other measures have failed. Cod-liver oil is sometimes called for, and is especially serviceable in the acne of young persons who are ill developed, spare, pale, and but half nourished. In these cases the affection is usually sluggish and non-inflammatory, and is, in fact, a mixture of acne and comedones. In women where there is menstrual difficulty the same general plan of treatment is to be pursued. The mineral acids are also of value in bringing up the general health. Arsenic, prescribed as a tonic, in two or three minim doses, is of decided service in certain forms of the disease. It may be ordered with benefit in the papular variety, and in those cases where the lesions are imperfectly developed. Minute doses of corrosive sublimate with bark will likewise sometimes prove useful in those cases where arsenic seems indicated. Gubler, of Paris, and Bulkley, of New York, speak well of the use of glycerine in the punctate form of acne, administered internally, in tablespoonful doses, two or three times daily. It may be combined with citrate of iron

and quinine. Hygiene is of importance in many cases, especially where iron, cod-liver oil, and like remedies are indicated. Where it is not contra-indicated, a cold bath in the morning may prove of assistance in regulating the functions of the economy. The diet should always be directed. All kinds of heavy or indigestible food, cheese, pastry, pickles, spices, and stimulating drinks, should be interdicted.

LOCAL TREATMENT.—The amount of inflammation, the passive congestion so frequently present, and the retention of sebaceous matter, are all points to be taken into consideration in the treatment. There are two diverse kinds of treatment which, according to the indications in the case, may be adopted. The one method calls for soothing preparations, the other for stimulating washes and ointments, with a view of arousing the glands to increased activity. In rare cases, where there is marked inflammation, accompanied with heat and redness and a general hyperæmia of the skin, mild washes and bland ointments will be found of service, the skin being treated as in any other simple inflammation. In the vast majority of cases, however, stimulating lotions and ointments are demanded, and may be at once prescribed. The face may be rubbed and washed every night or every other night with *sapo viridis* and hot water, the application being made with a piece of flannel. One part of soap to equal parts of alcohol and rose-water may also be employed for the same purpose; or two parts of soap to one of alcohol, where a stronger preparation is needed. Equal parts of soap and glycerine, perfumed with oil of bitter almond, will also be found useful. Such applications serve to open the gland ducts and permit of a discharge or squeezing out of the contents of the glands. This may be done between the fingers or by means of a watch-key, as described in connection with the treatment of *comedo*. In pustular acne especially, hot-water cloths, applied at night, afford relief to the congested and swollen follicles, and render their ducts more open for the exit of the sebum. This may be followed in the morning by a cold douche and frictions. Among the more active remedies, sulphur and its preparations hold the foremost place. In my opinion they are by far the most efficacious remedies in the treatment of the disease. They may be ordered with benefit in a large number of cases, prescribed in the form of ointments or lotions. Sometimes excellent

result is obtained from using perfumed precipitated sulphur, pure or with starch, as a dusting powder, allowing it to remain on the face over night. The strength of sulphur preparations should be made to suit the case, varying from half a drachm to two drachms to the ounce. The following can be recommended as an eligible formula :

R Sulphuris Præcipitati, ʒi;
Glycerinæ, fʒss;
Adipis Benz., ʒi;
Ol. Rosæ, gtt. iii.

M. Ft. ungt.

Sig.—To be thoroughly rubbed
into the skin at night.

Equal parts of sulphur ointment and petroleum ointment may be referred to as useful. Sulphur may also be employed to advantage with alcohol, as in the following, suggested to me by Dr. Bulkley :

R Sulphuris Loti, ʒi;
Ætheris, fʒiv;
Alcoholis, f ʒiiiss.

M.—Sig. Apply as a lotion.

Shake the bottle before using.

The appended may also be employed as a lotion :

R Sulphuris Præcipitati, ʒiii;
Glycerinæ, fʒii;
Alcoholis, f ʒi;
Aquæ Calcis, f ʒii;
Aquæ Rosæ, f ʒi.

M.—Sig. Shake the bottle before using.

Another good formula, known as Kummerfeld's lotion, may be given :

R Sulphuris Præcipitati, ʒiv;
Pulv. Camphoræ, gr. x;
Pulv. Tragacanthæ, ʒi
Aquæ Calcis, f ʒii;
Aquæ Rosæ, f ʒii.

M.—Sig. Shake the bottle before using.

Sulphuret of potassium likewise enjoys a reputation as a local remedy ; it may be prescribed as a lotion or as an ointment, in the strength of from five or ten grains to the ounce. The following formula may be given :

R Potass. Sulphureti, ℥ii
 Tinet. Benzoini, fʒiiss;
 Glycerinæ, fʒiii;
 Aquæ Rosæ, fʒviii.
 M.—Sig. Apply as a lotion.

Sulphuret of potassium, one drachm; sulphate of zinc, one drachm; rose-water, four ounces, will also be found a useful lotion, especially in the papular variety. Vleminekx's solution,* perfumed with oil of anise, diluted, one part to four or six of water, used as a lotion at night, may also be commended. When sealing begins, its use may be intermitted for a few days, or the lotion may be supplemented by some simple ointment to prevent this. In sluggish cases equal parts of sulphur, glyeerine, earbonate of potassium, and alcohol, well rubbed into the skin every night or less frequently, may be prescribed with benefit; also an ointment consisting of equal parts of sulphur, glyeerine, earbonate of potassium, and petroleum ointment or lard.

Erasmus Wilson's well-known compound hypochloride of sulphur ointment may also be mentioned, the formula for which is:

R Sulph. Hypochloridi, ʒiiss;
 Potass. Carb., gr. x;
 Adipis Benz., ʒi;
 Ol. Amygd. Amar., ℥v.
 M. Ft. ungt.

The mercurials are also very valuable remedies. If sulphur has been previously used, the skin should in all cases be thoroughly cleansed before they are applied. The biniodide of mercury may be employed where active stimulation is required, in the strength of from five to fifteen grains to the ounce.

The following formula of the late Mr. Startin, of London, containing sulphur and the red sulphuret of mercury, may be given:

R Sulphuris Præcipitati, ʒi;
 Spts. Camphoræ, ℥xv;
 Glycerinæ, fʒii;
 Hydrargyri Sulph. Rub., gr. v;
 Amyli, ʒi;
 Aquæ, fʒviii.
 M.—Sig. Shake the bottle before using.
 Apply as a lotion.

* For formula see Psoriasis.

The corrosive chloride of mercury is likewise a well-known remedy. In my experience its action is uncertain. It is best prescribed as a lotion in the strength of from an eighth of a grain to one or two grains to the ounce. Emulsion of almonds constitutes an excellent vehicle for its employment, as follows :

R Hydrargyri Chloridi Corrosivi, gr. ss ;
 Emuls. Amygdalæ Amaræ, fʒiv ;
 Tinet. Benzoini, fʒss.
 M.—Sig. Apply at night.

The corrosive chloride of mercury constitutes the basis of the majority of the "lotions for the toilet" and cosmetics sold in the market.* Stimulating remedies are also found in the protiodide of mercury and in ammoniated mercury, both of which may sometimes be used with good result where there is marked induration ; they may be prescribed in the form of an ointment, the former in the strength of from five to fifteen grains to the ounce, the latter double this strength. In severe cases of indurated acne, mercurial plaster may be applied, on cloths, during the night, as suggested by Neumann. Medicated soaps, containing carbolic acid, thymol, sulphur, and glycerine, are often serviceable, and may be made use of with profit in conjunction with other remedies. The dermal eurette, or scraper, has also been brought into service in the treatment of acne, and is especially useful in sluggish papular acne associated with comedones. The application of a minute quantity of the acid nitrate of mercury to the summits of the lesions is another mode of treatment, recommended by Hutchinson and other English dermatologists. The fluid should be applied cautiously with a pointed piece of stick or a fine glass rod, the pustules being lightly touched and the surplus acid at once absorbed

* Absorption of mercury from the use of such preparations, producing symptoms of constitutional poisoning, while rare, nevertheless occasionally takes place. Cases have been reported by Rosenthal (Wien. Med. Presse, 1876). Cosmetics containing lead are eminently dangerous, and may be followed by serious diseases of the nervous system, and even by death. Such cases have been reported by Rosenthal (loc. cit.) ; Hutchinson (Phila. Med. Times, vol. iv. p. 241) ; Sehenck (St. Louis Cour. of Med., May, 1879) ; Holland (New York Med. Rec., 1881, vol. i. p. 525) ; and Nagle (Physician and Surgeon, April, 1881). These face powders, often known as "flake white," commonly contain carbonate of lead.

with blotting-paper. Scars are liable to follow, and for this reason I cannot regard the treatment with favor. Where the pustules are large and full, they should be opened by incision with the knife and their contents squeezed out. If there is distention of the superficial cutaneous bloodvessels, they should likewise be incised and permitted to discharge. The slight bleeding which follows the operation will prove beneficial. Rubbing the skin with fine sand, as recommended by Ellinger, is another mode of mechanical treatment of use in some cases, especially where comedo is present and where active stimulation is demanded. Sluggish papular lesions may sometimes be advantageously touched with carbolic acid, a minute drop being applied. The treatment of artificial acne simply requires the removal of the cause, together with general directions as to local remedies, as may be demanded by the case.*

Prognosis.—Experience teaches that cases of acne run exceedingly variable courses. The prognosis must depend in a great measure upon our being able to determine the cause and, at the same time, remove it. In many cases this is possible, and the result accordingly favorable. On the other hand, examples not infrequently occur where the cause is obscure or inaccessible, and the cases are generally stubborn. But the question as to result is one of time merely, for the disease sooner or later tends to spontaneous recovery, although without treatment it may continue for years, involving the skin in a destructive manner. In some instances it is a grave process, in that it is attended with extensive suppuration and obliteration of the glands and ducts, leaving cicatrices which are permanent and disfiguring. The scars may be either insignificant and superficial or so large and deep as to resemble the marks of variola. Many cases of acne, on the other hand, leave no scars, suppuration and discharge or absorption taking place without destruction of the glands. The process may last a long while, often years if left to itself, and finally disappear as the cause has been gradually removed by changes in the general health and condition of the patient.

* A study of "the treatment of the various forms of acne and of rosacea" will be found in a clinical lecture by R. W. Taylor, Amer. Clin. Lectures, vol. iii., No. X., New York, 1878.

ACNE ROSACEA.

Syn., Gutta Rosea; Gutta Rosacea; *Germ.*, Kupferrose; Das Kupfrige Gesicht; *Fr.*, Couperose.

ACNE ROSACEA IS A CHRONIC, HYPERÆMIC OR INFLAMMATORY DISEASE OF THE FACE, MORE PARTICULARLY THE NOSE AND CHEEKS, CHARACTERIZED BY REDNESS, DILATATION, AND ENLARGEMENT OF THE BLOODVESSELS, HYPERTROPHY, AND MORE OR LESS ACNE.

Symptoms.—There are three stages of the disease. It is characterized at first by a more or less diffuse hyperæmia in the part, unattended by enlargement or swelling. This is of a passive character, the blood circulating slowly through the capillaries and inclining to stasis. If the nose be attacked, it is often greasy (seborrhœic), and is apt to feel cold rather than warm. The process is usually a gradual one, months and years often being necessary for its development. In the course of time the second stage sets in. The redness is noted to be more permanent in character, and subject to fewer changes. Upon close examination of the affected part, the minute ramifications of the cutaneous bloodvessels are seen to be dilated and enlarged, appearing as delicate or coarse, red lines running superficially over the skin. The course which they pursue is irregular; they run in all directions, and are for the most part tortuous. They vary from one to several lines in length. They also vary as to their calibre. Occurring upon the alæ of the nose, they usually run parallel with the cartilages of the alæ; over the nose they run for the most part irregularly. Sooner or later in the majority of cases acne papules and pustules manifest themselves. They appear here or there upon the part, and may be few or numerous; as a rule, they occur in limited numbers. True acne rosacea is now developed, the disease consisting of rosacea—the dilated and hypertrophic bloodvessels—with papular or pustular acne superadded. It occurs in all degrees, from that which constitutes but a slight affection to that which greatly disfigures the part. The face is the region attacked, and the nose is the usual seat; occurring here, it may involve the alæ, the tip, or the bridge. The cheeks are also often invaded, the disease either first appearing on these regions or spreading to them from the nose. The forehead is also some-

times attacked. I have seen it localized here in a most positive form, leaving the nose and the rest of the face free. Finally, all of the regions enumerated may be attacked simultaneously.*

The course of the affection is usually a chronic one, lasting years. In some cases, however, it makes its appearance in a comparatively short time, in the course of months; in these instances there is simple dilatation of the vessels only, and no hypertrophy. The affection runs a variable course to its ultimate termination. The process is rarely, if ever, so violent in its nature in women as in men. Often it does not go beyond the first stage in women, hypertrophy being rare. Having, however, in either sex once attained certain degrees of development, it may remain in this state; or, on the other hand, it may continue increasing in its proportions, the process becoming more active year by year, until finally the cutaneous tissues are greatly hypertrophied, the bloodvessels enormously distended, the glands enlarged, and the part seriously altered. This condition constitutes the third stage of the process. These changes are usually observed in connection with the nose, which organ is not infrequently deformed. The new growth of connective tissue and bloodvessels at times goes on to such an extent as to give rise to a bulky formation. Noses of this kind, either with or without acne, may not infrequently be seen in the streets of large cities. They are red, usually of a dark-red or livid color, and are either simply enlarged, the normal proportions of the organ being preserved, or are contorted into various irregular shapes, more or less lobulated and pendulous. At times they assume monstrous proportions, and may be as large as a fist (RHINOPHYMA.)†

According as the disease is in one stage or another of its development, as well as at one time or another, will the part be cold, normal, or hot. In the first stage, that of passive hyperæmia, especially in chlorotic women, the nose is often cold. Where the process is accompanied by the abundant formation of acne lesions, the part is apt to be warmer than normal. These symptoms come

* See Plate E in my Atlas of Skin Diseases.

† See a case reported by the author in the Photographie Rev. of Med and Surg., vol. ii., 1871-2. Also, Hebra's Atlas of Skin Diseases, Lief. VII., Tafel 6.

and go, and may be induced by excesses in eating or drinking, as well as by exposure to heat and cold. The disease is seldom attended with marked subjective symptoms.

Etiology.—The causes are frequently of a diverse nature. The disease is met with in both sexes, but the causes may be different in the sexes. It is seen most highly developed in men. In women the complaint, in the majority of cases, does not pass beyond the first stage,—that of hyperæmia and stasis. It may, however, pass into the second stage, and is then characterized by permanent enlargement of the vessels. As Hebra first pointed out, acne rosacea in women is noted to occur at two periods of life, namely, in early womanhood, and again later, at the climacteric period, and is often attended by menstrual disorder. In the former of these periods the disease is not apt to be severe, and is usually observed to be associated with seborrhœa, and manifestly due to the same cause which has brought about this affection. With the disappearance of the seborrhœa the rosacea also generally departs, either to remain away or to return later in life. The causes in these cases are to be found in chlorosis, menstrual difficulties of one kind or another, dyspepsia, and similar conditions of ill health. At the climacteric period, in both married and unmarried women, the affection is liable to show itself in a severer form, attended with enlargement of the bloodvessels.

In men, occurring early in life, in the first stage, I have not infrequently observed it to be associated with a seborrhœic condition analogous to that seen in young women. Here, however, there is simply hyperæmia, the bloodvessels being dilated but not permanently enlarged. Noses thus affected are often cold, notwithstanding their rosy hue. The causes in these instances are anæmia, general debility, nervous prostration, dyspeptic symptoms, and other conditions which have been mentioned in speaking of seborrhœa. Spirituous liquors are known to be a frequent source of acne rosacea. Brandy, whiskey, wines, and other strong alcoholic drinks, taken in quantity and habitually, give rise to the affection in all of its stages, and upon various regions of the face. The “brandy nose” and the “wine nose,” to be seen daily in any community, are common examples of the power that alcohol possesses in producing the disease. On the other hand, there are cases, occurring in both men and women, in which no cause what-

ever for the development of the affection is to be found.* It is at times seen in those who are constantly exposed to the weather, as cabmen, etc.; but in these cases the condition is generally one of simple rosacea† rather than of acne rosacea.

Pathology.—This has been already alluded to in describing the symptoms of the disease. There are three grades or stages of acne rosacea, and according as one or another of these is examined will the changes be somewhat different, the difference between the first and the third stage being marked. In the first stage there is simply a collection of an undue amount of blood in the part, in the form of stasis. This condition may remain for an indefinite period—for months or years—without undergoing much alteration. Sooner or later, however, the second stage manifests itself by permanent dilatation and hypertrophy of the capillaries, together with the involvement of the sebaceous glands, in the form of acne, either papular or pustular. The disease is now typical. It assumes a chronic action, is better and worse from time to time, and either remains in this condition permanently or goes on to the third stage. This is characterized by an exaggeration of the second stage, and is marked usually by more or less hypertrophy of all the tissues of the affected part, and a connective-tissue new growth. The nose at times becomes greatly distorted, and may assume various abnormal shapes. According to Hans Hebra's studies,‡ the enlargement is produced by an abnormal growth of connective tissue. The sebaceous glands are divided into lobules by new growths of connective tissue. In a case successfully operated on by Dr. C. Wagner,§ of New York, the microscopical examination by Dr. Piffard is given as follows. The horny layer was scanty, but the rete mucosum thick, with well-formed cells. The papillæ were enlarged in length and breadth, and contained round and fusiform cells. The sebaceous glands were not much altered; some of the glands were normal, others were undergoing degenerative changes. The corium was greatly thickened, and presented the appearance of a formed tissue.

* See a report of a clinical lecture on Acne Rosacea, by the author, in *Med. and Surg. Reporter*, Aug. 14, 1875.

† See Rosacea.

‡ Viertelj. f. Derm. u. Syph., Heft 4, 1881.

§ *Arch. of Clin. Surg.*, vol. i. p. 21.

Diagnosis.—No difficulty should arise in recognizing the affection when the history, course, and peculiar anatomical changes of the disease are borne in mind. It is a chronic disease. In this respect it differs from the tubercular syphiloderm, the disease with which it is most likely to be confounded. The course of the tubercular syphiloderm may be slow, at times continuing through a period of months; acne rosacea, when pronounced, will in all probability have existed for years. In syphilis the tubercles or lesions do not specially involve the glands; in acne rosacea the seat of the pustules is always about these structures. Ulceration, in one form or another, may usually be detected about syphilis of the nose; this process never takes place in acne rosacea. Crusts are apt to be present in syphilis; they never occur in acne rosacea. The tubercles of syphilis are generally much larger, firmer, and more pronounced than the lesions met with in acne rosacea. The color of syphilitic tubercles is a dull, coppery red; in acne rosacea the color is usually either bright red or violaceous, according to the stage and form of the disease. In acne rosacea the superficial bloodvessels of the skin are enlarged and conspicuous, features that are wanting in syphilis. Acne rosacea usually attacks the end of the nose uniformly, both sides being involved; syphilis is apt to localize itself, often more markedly on one side than on the other. The severer forms of acne rosacea, such as would be likely to be confounded with syphilis, are rarely encountered before the age of forty or fifty, and occur more particularly in men; syphilitic disease of this character may show itself earlier in life. Finally, the history in doubtful cases will usually be of service in arriving at a conclusion.

Lupus vulgaris may bear some resemblance to acne rosacea, for, as is well known, this disease is apt to make its appearance about the face, and especially the nose. In lupus vulgaris the characteristic, roundish, yellowish or reddish papules and tubercles may generally be detected; they are pin-head or larger in size, and usually involve only a portion of the nose, as the tip or one ala. Ulceration, moreover, followed by crusts and ugly cicatrices, takes place sooner or later in lupus, symptoms that are never present in acne rosacea.

Lupus erythematosus can only be confounded with acne rosacea when it happens to show itself upon the end of the nose. The

skin in lupus erythematosus is harsh and covered with adherent, whitish or yellowish scales, which are connected with the openings of the sebaceous follicles; in *acne rosacea* none of these symptoms are present. The first stage of *acne rosacea*, especially of the nose, may bear resemblance to frost-bite. The histories, however, and the symptoms will always serve to distinguish them.

Acne rosacea may be known from *acne* by the presence of the enlarged bloodvessels and the hyperæmia. The line dividing the early stage of *acne rosacea* from certain forms of *acne* is at times ill defined, for, as we have seen, the disease under consideration is made up of certain changes of the vascular system, together with *acne*. The involvement of the bloodvessels determines the ease to be one of *acne rosacea*.

Treatment.—The mode of treatment to be adopted will depend upon the stage of the disease, and upon the nature of the cause of the affection, where this is ascertainable. Both constitutional and local remedies are employed. The causes which have given rise to the process should be sought after. In women, uterine and menstrual disorders, and bowel derangement, are to be corrected by the appropriate remedies, and the general health in every way improved. In men, the use of all alcoholic drink is to be interdicted, and the bowels kept open by saline laxatives. The diet in both sexes should be prescribed. The general treatment is that of *acne*, to which the reader is directed.

Local treatment in the majority of cases is found to be of greater value than internal remedies. Stimulating preparations of one kind or another are suitable in all stages. In the first stage we may expect good results from the use of sulphur and the corrosive chloride of mercury. The former of these I have found by far the most valuable. It may be employed in the form of an ointment or as a lotion, as in the case of *acne*. From one to three drachms of precipitated sulphur to the ounce of ointment will generally be found serviceable. The English hypochloride of sulphur may also be used in the same strength. Anderson gives the formula for a preparation composed of the hypochloride of sulphur with *rumex* ointment,* two drachms to the ounce, which

* The *rumex* ointment is prepared as follows: *rumex* root, nine ounces; lard, six ounces; yellow wax, one ounce; water, sufficient quantity. Wash

he speaks well of. Lotions containing sulphur, prepared according to the formulæ given in speaking of acne, are often of great service, and in some cases more useful than ointments. Corrosive sublimate may sometimes be employed in the first stage with favorable result, in the strength of from half a grain to two grains to the ounce, either of ointment or of alcohol; likewise the various officinal mercurial ointments. Mercurial plaster, spread upon cloths and applied to the part, may be employed in some cases with benefit, as recommended by Neumann and Hebra.

In the second stage of the disease stronger applications are frequently required. The distended bloodvessels here should be incised with a sharp knife, and permitted to bleed. Cold-water cloths may afterwards be applied. This operation is to be repeated once or twice weekly, according to circumstances. The part may, moreover, be scarified with parallel incisions, the operation being repeated from time to time. Subsequently one of the sulphur ointments may be rubbed into the part. In the second stage I have also used caustic potassa solutions with good result, in the strength of from ten to twenty grains to the ounce, painted with a brush over the part once or twice weekly, followed by an emollient ointment. In cases where there is but little thickening, Neumann speaks well of brushing the part with a solution of one part of carbolic acid in three or four parts of alcohol, the application to be made every second day. Hardaway,* of St. Louis, recommends electrolysis for the obliteration of the enlarged vessels. The finest cambric needle, attached to the negative pole electrode of the galvanic battery, is used, the needle being inserted sufficiently deep to enter the dilated vessel. The circuit is then made by the patient taking the positive pole in the hand. After the electrolytic action has been properly developed, from six to ten elements of the battery being generally necessary, the patient releases the positive electrode, after which the needle is withdrawn. If the vessel is a long one, several punctures must be made perpendicularly along its course; if a short one, the needle may be

and bruise the roots; boil for two hours and strain; evaporate to four ounces; add gradually to the wax and lard previously melted, and keep stirring until cold.

* Arch. of Derm., Oct. 1879.

inserted parallel with and into the lumen of the vessel. Faradization has been employed by Cheadle, who reports favorable results in several cases.* Piffard† also speaks well of both the faradic and the galvanic current. Where the process has been allowed to go on to the third stage, ablation of the diseased skin with the knife may be successfully practised, and is the only effectual remedy.

Prognosis.—Where the process has not passed beyond the first stage, a favorable result may usually be looked for; on the other hand, where a new growth of connective tissue has taken place about the vessels and around the glands, the prognosis should be guarded. Much, however, can be accomplished by judicious treatment, which in all cases will prove of more or less service. Left to itself, the disease exhibits no disposition to spontaneous cure, but, on the contrary, inclines to continue for years, altering the tissues of the part attacked in the manner already indicated.

SYCOSIS NON-PARASITICA.

Syn., Sycosis; *Mentagra*; *Acne Mentagra*; *Folliculitis Barbæ*; *Germ.*, *Bartfinne*; *Fr.*, *Sycosis Non-Parasitaire*.

SYCOSIS NON-PARASITICA IS A CHRONIC, INFLAMMATORY, NON-CONTAGIOUS DISEASE, INVOLVING THE HAIR-FOLLICLES, CHARACTERIZED BY PUSTULES, PAPULES AND TUBERCLES PERFORATED BY HAIRS, ACCOMPANIED USUALLY WITH BURNING SENSATIONS.

Symptoms.—The disease commences by the formation of several or numerous papules or pustules surrounding the hairs situated usually about the region of the cheek, chin, or upper lip. New lesions, as a rule, develop, until a patch involving considerable surface results. They incline to appear from time to time in the form of successive crops. They have their seat immediately around the hairs. The pustules are either flat or acuminated; generally pin-head sized; contain a yellowish fluid, and show no disposition to rupture. They are discrete, and usually remain so throughout their course. Not infrequently, however, they are so numerous as to be crowded together. They are accompanied by marked redness of the surrounding skin, sometimes swelling,

* Practitioner, July, 1874.

† Mat. Med. and Ther. of the Skin. New York, 1881.

and by sensations of a burning character and at times pain. If the beard be permitted to remain, they dry into crusts. In addition to the typical pustules described, papules and papulopustules are usually present, and in some cases tubercles manifest themselves. More or less inflammatory thickening also generally exists, especially in cases of long duration.

The cheeks, chin, and upper lip are the common seats of the disease; any one of these regions alone, or all of them at the same time, may be attacked.* The hairy portion of the neck may also be invaded. The affection may begin either by showing itself at once over all the parts, or, as is more usually the case, it may attack one portion and thence extend gradually to other regions. The hairs are usually so firmly seated in their follicles as to render their extraction more or less painful. The course of the disease is chronic. Without proper treatment it may continue for years.

Etiology.—The causes are not well understood. The disease usually occurs between the ages of twenty-five and fifty. It is encountered among all classes of society, though in my experience by no means a common disease, and attacks the well-nourished as well as those surrounded by poverty. It is met with among those who do not shave, as well as among those who do; shaving, therefore, cannot be regarded as its cause. It is not contagious.

Pathology.—Non-parasitic sycosis is to be viewed as a simple peri-follicular inflammation. According to Robinson,† who has examined microscopically portions of living skin, the first changes which take place occur around the follicle, in the peri-follicular region, and are those which are usually encountered in vascular connective-tissue inflammations. The disease in its early stage, therefore, is not a folliculitis but a peri-folliculitis. As the inflammation proceeds, the follicle and its sheaths become affected, the latter becoming softened and more or less destroyed, and a portion of the surrounding pus may enter the follicle through the ruptured sheaths. At times no pus enters the follicle, the changes which take place being due to the serum which there collects. The cells of the root-sheaths and of the hair-root undergo destructive

* A marked example of the disease invading all of the regions mentioned may be found in my *Atlas of Skin Diseases*, Plate H.

† New York Med. Jour., Aug. and Sept. 1877. A valuable monograph.

changes, the cell-bodies and connecting substance being first destroyed, a granular mass containing round bodies, the nuclei of the fixed cells of the part, remaining. The follicle-sheath and the connective tissue in the peri-follicular region are more or less destroyed, and the rete mucosum becomes ruptured on a level with the upper part of the neck of the follicle, the pus reaching the surface by forcing its way through the rete. According to Robinson, it does not pass between the shaft of the hair and the follicle-sheath as stated by Wertheim.

The hairs in the early stages are always firmly seated in their follicles; later, through suppuration, they may become loose, but this does not always occur. The amount of suppuration varies in different subjects. The follicle-sheaths usually accompany the hair when extracted from pustules; upon this point Dr. Robinson's views differ, he stating that such is not the rule. The condition will be found to vary with the stage of the disease. The cavity remaining after extraction of a hair, where the follicle is not entirely destroyed, contains pus along its walls and at its base. The structures at the base of the follicle, including the papilla, may or may not be destroyed; where such destruction occurs, generally in the later stage, scars and permanent alopecia result.

Diagnosis.—Non-parasitic sycosis is to be distinguished from tinea sycosis, from which it differs not only in its cause, but also in its clinical features. These two diseases both attack the hair-follicle with inflammation, but produce such different symptoms as to call for a clear separation. The peculiar lumpy, tubercular, nodular, uneven surface of the skin, so characteristic of tinea sycosis, is generally wanting in the disease under discussion. But the changes connected with the hair itself will be found of even more value than this symptom, and may be relied upon as a means of diagnosis. In tinea sycosis they are loose, readily extracted from their follicles, and are seen to be twisted or broken, with a root that is often dry and manifestly diseased. Under the microscope the question of diagnosis offers no difficulty, for the presence or absence of fungus is easily demonstrable. Sycosis often bears a likeness to pustular eezema, from which, however, it may be known by the absence of oozing, as well as of itching; eezema, moreover, attacking the beard, would be apt to be present upon other portions of the face. It will also be remembered that in sycosis each pustule

is penetrated through its centre by a hair. No difficulty will be experienced in distinguishing sycosis from the acuminate pustular syphiloderm; the existence of pustules upon other regions of the face, as well as upon the body, would be sufficient to exclude sycosis.

Treatment.—External treatment will generally be found of greater value than internal remedies. In obstinate cases, however, as well as in those which are associated with general impairment of nutrition, iron, small doses of arsenic, and cod-liver oil may often be given with advantage. Sometimes alkalis may be prescribed with benefit; in other cases saline aperients. The treatment, upon the whole, is similar to that employed in pustular eczema. Where there is considerable inflammatory thickening, Tilbury Fox speaks well of Donovan's solution. The general condition is to be looked after in all cases, as in other diseases of an inflammatory character. Exposure to all irritating influences should be avoided as much as possible, as, for example, the extremes of heat and cold.

The first and most important step in the local treatment is to have the parts clipped or shaved. According to my experience, no rule can be given for either procedure; in some cases shaving will be tolerated and followed by relief, while in other cases clipping the hair close to the surface affords the best results. Shaving is to be performed every second or third day, according to the rapidity with which the beard grows. The hairs should at first be clipped with scissors, after which they may be macerated with poultice; when this has been accomplished, no great pain will be experienced upon shaving. After a few days the operation will be found much less painful, and in a short time, as a rule, may be performed without serious discomfort. Where the disease is acute and there is swelling, the inflammation is to be treated as in acute pustular eczema, by means of soothing lotions and ointments. The irritation present should always receive due attention, and should be modified as much as possible. The applications to be employed must vary with the stage of the disease. If highly inflammatory, black wash may be applied several times through the day, followed by oxide of zinc ointment with a drachm of alcohol or ten or twenty grains of camphor to the ounce, spread upon cloths and bound to the part. A weak calomel ointment, fifteen to thirty grains to the

ounce of oxide of zinc ointment or petroleum ointment, may also be used, and will often be found a valuable remedy. Where the affection has existed for some time, the part may be treated by means of diachylon ointment and soft soap. The pustules are to be opened, and the skin well rubbed with soft soap and water, after which strips of muslin spread thick with diachylon ointment are to be applied and bound to the face. In other cases, a more stimulating plan of treatment may be used with advantage; for this purpose sulphur ointment, half a drachm or a drachm to the ounce, or ammoniated mercury, in the form of ointment, fifteen to thirty grains to the ounce, will be found of service. The ointment of the nitrate of mercury, one or two drachms to the ounce of ointment, may also be employed; likewise the red oxide of mercury, from five to fifteen grains to the ounce. Corrosive chloride of mercury in the form of a lotion, from a quarter of a grain to a grain to the ounce of water or alcohol, may also be used in some cases with benefit. Sulphur lotions, as in acne, may likewise be prescribed with advantage. When there is much thickening of long standing, Dr. Robinson advises a weak preparation of the oleate of mercury with morphia, applied once every third or fourth day. Finally, as in the case of acne, the dermal enrette may sometimes be used to advantage, as recommended by Auspitz,* and also by Behrend.†

Depilation is recommended strongly by Hebra, Kaposi, and others, the hairs being extracted by means of a pair of depilating forceps. A small area is depilated each day, and the part after the operation dressed with diachylon or oxide of zinc ointment. The operation is generally more or less painful, and, according to my experience, can be tolerated only where there exists considerable suppuration, and not always even in these cases. On this point, however, dermatologists differ, some stating that in the pustular stage the hairs are easily extracted. The part should be fomented with poultice or hot water before the operation is undertaken. Veiel, of Cannstatt, treats the disease according to the following heroic method. The hairs are cut short, the crusts removed with poultice, and a preparation consisting of two parts of

* Ueber die Mechanische Behandlung der Hautkrankheiten: Viertelj. für Derm. u. Syph., 1876. p. 586.

† Deutsche Med. Wochenschr., No. 20, 1881.

tar and one part of *sapo viridis* is rubbed into the skin, after which the hairs may be readily extracted. After depilation has been performed, acetic acid is applied with a brush. A crust is formed, which comes off in three or four days. The operation, if necessary, is to be repeated. Sulphur ointment completes the treatment, recovery usually taking place in four weeks. Where shaving has been practised, the patient should be directed to continue the operation for months after the disease has disappeared.

Prognosis.—The hope of a speedy cure should never be held out to the patient, for, while certain cases yield readily to treatment, others will be found to resist the most judicious remedies.

IMPETIGO.

IMPETIGO IS AN ACUTE, INFLAMMATORY DISEASE, CHARACTERIZED BY ONE OR MORE PEA OR FINGER-NAIL SIZED, DISCRETE, ROUNDED AND ELEVATED, FIRM PUSTULES, UNATTENDED, AS A RULE, BY ITCHING.

Symptoms.—The eruption may or may not be preceded by symptoms of general disturbance. When present, they are slight and consist of loss of appetite, constipation, or malaise. The disease manifests itself by the formation of one or more distinct pustules. They begin as veritable pustules, the pustular character of the lesion showing itself in the earliest stage of the process. When fully formed, they vary in size from a split pea to a finger-nail. They are rounded in shape; are raised prominently above the surrounding skin; have thick walls; and are at first surrounded with a more or less pronounced areola. The elevation is often striking, varying from an eighth to a quarter of an inch, the lesions generally having a semiglobular form. There is no central depression or umbilication. The pustules are yellowish or whitish in color, and are usually tensely distended with fluid, and consequently are conspicuous. After they have arrived at maturity, the areola referred to generally subsides, leaving the lesions clearly defined. There is but little surrounding infiltration. Throughout their course they manifest no disposition to rupture. They are discrete, and occur here and there in a disseminated manner. Even when situated close together, as may occur upon the hands, they do not incline to coalesce. In number they vary from two or three to a dozen or more. They occur upon all parts

of the body, but are commonly seen about the face, hands, and fingers, feet and toes, and lower extremities; also upon the palms and soles. They are not attended, as a rule, by either itching or burning. The disease runs an acute course, usually lasting several weeks. The pustules sometimes appear suddenly, and are apt to come out one after another during the first week of the attack. Having reached their full size, they remain in this condition for a day or two, when their contents become altered, at times bloody, and they undergo absorption or crusting. Frequently they are ruptured through contact with external agencies, when they pour out usually a thin puriform fluid; as a rule, it is not thick, as might be expected from the appearance of the pustules. If ruptured or pricked with a needle early in their course, they may again fill with fluid. The amount of crusting varies: at times it takes place abundantly, yielding yellowish or brownish crusts; in other cases it is insignificant, the fluid undergoing absorption. Whatever crust remains desiccates and drops off, leaving a reddish base without pigmentation or scar. The disease is a benign process, inclining to terminate in speedy recovery. Relapses are not likely to occur.*

Etiology.—It is an affection confined for the most part to children, and is usually encountered between the ages of three and ten. As a rule, it occurs in well-nourished and healthy subjects, who perhaps have had little or no previous illness. It does not appear to be in any way connected with eczema, nor is it usually associated with disorder of the stomach or of the bowels. In adults I have observed it chiefly upon the hands and fingers. It is not contagious. It is one of the rarer skin diseases.

Pathology.—The lesion is a typical pustule. The first manifestation upon the skin possesses all the characters of a true pustule, which continue throughout the entire course of the disease. The process is a circumscribed one. At no time during its course are the lesions seated upon a highly inflammatory base; they rise abruptly from the surface much in the manner of the blebs of pemphigus. Anatomically the pustule is well formed, and possesses thick walls, which are probably composed of both the horny

* The disease I have described is, it seems to me, the only affection to which it is proper to apply the term Impetigo. The process is a distinct and well-marked one, and is worthy of the name.

and the mucous layers of the epidermis. Microscopical examinations of the contents of the pustules, which I have made in various stages of the process, show the fluid to be of a whitish-yellow color, the color as well as the consistence of the fluid depending somewhat upon the age of the lesion. Under two hundred and fifty diameters the field contains a variable number of pus corpuscles, more or less closely packed together, with here and there red blood corpuscles, epithelial cells, and cellular detritus.

Diagnosis.—The disease has, I think, features sufficiently distinctive to allow of its being separated from other affections to which it bears resemblance. It may be distinguished from pustular eczema by the size and peculiar conformation of the pustules. The pustules of impetigo are large and prominent; those of eczema are small, and are not raised to the same extent. In impetigo the pustules are discrete, and do not incline to run together; in eczema they are usually seated close together, and manifest a disposition to coalesce. The pustules of impetigo rarely occur in numbers; those of eczema are usually numerous. In impetigo there is but little infiltration; in eczema more or less thickening of the skin is a pathognomonic feature. In impetigo the pustules do not incline to rupture, and there is consequently no discharge; in eczema the pustules break early in their course, and are succeeded by extensive crusting; the exudation, moreover, is in these cases apt to continue. In impetigo there is little or no itching; in eczema the itching is generally marked.

Impetigo bears a resemblance in its general features and course to impetigo contagiosa, which is to be viewed not as a variety of impetigo, but as a distinct disease. The initial lesion in impetigo contagiosa is a vesicle or vesico-pustule, similar to that of vaccinia; in impetigo it is a perfect pustule. The lesion of impetigo contagiosa is superficial; that of impetigo has a deeper seat. The pustule of impetigo contagiosa tends to flatten, and is often marked by umbilication; that of impetigo is rounded, conspicuously raised, and without central depression. Impetigo, moreover, is not contagious.

Impetigo also resembles ethyma. In ethyma the pustules are flat, and are surrounded by an extensive, inflammatory, hard base; in impetigo they are elevated and rounded, and have generally but a slight areola. The crusts in these diseases are also different; in

ecthyma they are brownish or blackish in color, are large and flat, and are seated upon a deep excoriation. Impetigo usually occurs in the strong and healthy; ecthyma in the weakly and cachectic.

Treatment.—In the majority of cases but little interference is necessary. The pustules, as soon as they mature, may be opened with a sharp bistoury and the contents permitted to escape. The part should be protected from external influences, as rubbing of the clothes or other violence. The lesions may be dressed with some mildly stimulating ointment, as in the case of impetigo contagiosa. The affection inclines to spontaneous recovery.

IMPETIGO HERPETIFORMIS.—Under this name Hebra* has described a rare and grave form of skin disease of which at that time he had seen but five examples, four of which terminated fatally. According to Hebra, the disease is characterized by the formation of yellowish pustules, arranged in groups or in an annular form, which tend to run together and to dry into yellowish, greenish, or brownish crusts, beneath which there exists a red, moist, excoriated, non-ulcerating surface, similar to that of eczema rubrum. On the periphery of these patches new groups and rings of pustules manifest themselves. In all of the cases the patients were women, and were either pregnant or had recently been delivered. The course of the disease was similar in each case. The anterior surface of the trunk and the flexor surfaces of the thighs were the chief seats of the lesions, but other regions, as the upper extremities, legs, neck, and back, and even the face, were invaded. Each outbreak of pustules was preceded by malaise, chills, fever, and general systemic disturbance.† Isolated cases, under different names, were before this date reported by Bärensprung,‡ Neumann,§ Auspitz,|| and Geber,¶ and were for the most part viewed as varieties of herpes. More recently C. Heitzmann has described a case, with the name impetigo herpetiformis, in a communication presented to the American Dermatological Association.**

* Atlas der Hautkrankheiten, Heft ix., Tafeln 9 und 10. Wien, 1876.

† Wien. Med. Wochensh., No. 48, 1872; also Lancet, March 23, 1872.

‡ Atlas der Hautkrankheiten, Tafel 8. Berlin, 1867.

§ Lehrbuch der Hautkr., III. Aufl., Wien, 1873, p. 173.

|| Archiv für Derm. und Syph., II. Heft, 1869, p. 246.

¶ Jahresb. der K. K. Allg. Krankenhauses zu Wien, Jahrg. 1871.

** Arch. of Derm., Jan. 1878.

Within the last ten or twelve years I have from time to time met with cases, occurring in both sexes, and representing other phases of the disease than heretofore described. In some cases the lesions were vesicular and bullous;* in others pustular; in still others, and in the majority of cases, bullous and pustular combined, or these lesions appearing alternately,—the disease being at one time vesicular and bullous, at another time pustular. In all instances the disposition to group or to extend about the periphery was more or less marked. A variable amount of constitutional disturbance, with violent itching, was always present. The disease manifested a disposition to constant recurrence, in the form of repeated attacks, extending in the majority of the cases over years, and was but little influenced by treatment. None of the cases occurred in pregnant women; nor in any instance has the disease proved fatal.

The disease is liable to be confounded with eczema, ecthyma, and pemphigus, according as the lesions existing at the time happen to be vesicles, pustules, or blebs. The etiology and pathology of the disease are both obscure. In some cases it possesses many features in common with pemphigus, to which disease Heitzmann thinks it bears a close relationship;† other cases, however, manifest but little disposition to the formation of blebs.‡

IMPETIGO CONTAGIOSA.

IMPETIGO CONTAGIOSA IS AN ACUTE, INFLAMMATORY, CONTAGIOUS DISEASE, CHARACTERIZED BY THE FORMATION OF ONE OR MORE SUPERFICIAL, DISCRETE, ROUNDISH OR OVALISH VESICO-PUSTULES OR BLEBS, THE SIZE OF A SPLIT PEA OR FINGER-NAIL, WHICH PASS INTO CRUSTS.

Symptoms.—The eruption is usually preceded by slight febrile disturbance, especially in infants. Small, isolated, flat or raised vesicles are first noticed, which in a day or two become vesico-

* In Hebra's fifth case the disease was characterized by vesicles and blebs, from which circumstance he was inclined to regard the disease as a variety of herpes, and designated it "herpes impetiginiformis." *Lancet*, March 23, 1872.

† *Arch. of Derm.*, Jan. 1878.

‡ It is therefore evident that the process is capable of appearing in the form of varied lesions, and that the term impetigo herpetiformis represents but one variety of the disease. More information is needed before the disease can be assigned its proper place in classification.

pustules or pustules. At first they are small, but they tend to increase in size rapidly, until they may become as large as small blebs. They are roundish or ovalish in shape, and are at times marked by central umbilication. A slight areola usually surrounds them, which, however, disappears upon their maturation. They rarely exist in numbers, as a rule, three or four or a dozen occurring at the same time. Not infrequently, when situated close together, they coalesce and form a small patch. In a few days, either from rupture or their natural course, crusts form; these, indeed, are almost always present when the case first comes under observation. They are noticed to be flat, more or less elevated above the surrounding skin, yellowish or straw-colored, and but slightly adherent. Beneath them exist excoriations, which secrete a thin puriform fluid. After the crusts have become dry they fall off, leaving a reddish base, which gradually fades away. The lesions may all show themselves simultaneously, or they may appear in successive crops. The usual seat of the eruption is the face and hands; but the scalp and arms, as well as other regions of the body, may also be attacked.* The mucous membrane of the mouth and the conjunctivæ are sometimes invaded. It may be spread by auto-inoculation. Its course is usually a definite one, and lasts about ten days. It not infrequently happens that the disease assumes an anomalous or an abortive form, the lesions being either few, ill defined, or irregular in their course.†

Etiology.—It is encountered chiefly among the poor and improperly cared-for, although it is at times met with among those in the upper walks of life. Cleanliness exercises a certain control over the spread of the disease. It is confined almost exclusively to children. It is both contagious and auto-inoculable. The cause of the disease has not as yet been determined. In a number of instances it is known to follow vaccination.‡ Sometimes it mani-

* A typical, extensively developed case, in a boy aged 12, came under my care where the lesions occupied, and were confined to, the buttocks. There was no history of contagion.

† Dr. F. P. Foster, under the name "*herpes contagiosus varioliformis*," has described a peculiar disease which resembles the affection under consideration. (*Arch. of Derm.*, Jan. 1875.) Cases of *impetigo contagiosa* have been ably described by Dr. R. W. Taylor. See *Amer. Jour. of Syph. and Derm.*, Oct. 1871, p. 368; also *Bost. Med. and Surg. Jour.*, June 6, 1872.

‡ The relationship between contagious impetigo and vaccination is as yet

feels itself in the form of an epidemic.* It certainly is more prevalent some years than others.

Pathology.—The views of observers are somewhat conflicting as to the nature of the disease, some holding that it is due to the presence of a vegetable organism, others that no such cause can be demonstrated. Kohn,† Piffard,‡ and Geber§ describe a fungus as existing in the crusts; the growths discovered by the two first of these observers, however, are not the same. Kohn found a luxuriant parasite, consisting of thin, long mycelium, which was branched and fork-shaped, each thread terminating in a refractive, knob-like end. It made a thick net-work, here and there assuming the form of distinct loops. In general appearance it resembled the trichophyton as seen in *tinea circinata*, but differed from it in being not more than half as thick. Here and there it was observed to be in a state of fructification. The vegetable organism described by Piffard, on the other hand, is made up of variously shaped and sized, extremely minute, circular, oval, biscuit-shaped, and rod-like structures. Neither mycelium nor spores were present.|| Geber looks upon the disease as a peculiar form of *tinea circinata*, and therefore as due to the trichophyton fungus,—a view which is, I believe, entertained by no one else. Radcliffe Crocker¶ has found micrococci, mostly in lines of fours, floating in the fluid derived from vesicles and pustules, which he suggests may be the source of the contagion. Other observers, myself among the

not clear, but that some connection does at times exist seems probable. The cases which have come under my observation have on several occasions followed vaccination.

* See a paper by Dr. Arthur Van Harlingen, Med. and Surg. Reporter, Sept. 8, 1877. Within a few weeks a large number of cases, from various districts of the city, came under observation at the several institutions with which Dr. Van Harlingen and the writer are connected.

† Wien. Med. Pressc, June 4, 1871.

‡ New York Med. Jour., June, 1872.

§ Wien. Med. Presse, Nos. 23 and 24, 1876.

|| Dr. Piffard in his investigations twice encountered a fungus similar to that described by Kohn, but he inclines to the view of its being accidental.

In the July number, 1872, of the New York Medical Journal, Dr. Piffard discusses impetigo contagiosa and its relations to vaccineinia. A series of microscopic examinations upon the crusts of vaccineinia were made, in all of which he discovered the same fungoid bodies found in impetigo contagiosa.

¶ Lancet, vol. i., 1881.

number, have not been able to demonstrate its parasitic nature. Tilbury Fox, to whom is due the credit of having first clearly described the disease,* has never been able to find the presence of fungus in the vesicles; he, however, discovered such elements in the crusts, but he viewed their occurrence here as accidental.

Diagnosis.—The affection is most liable to be confounded with *eczema pustulosum* and with *impetigo*; it may always be distinguished from these diseases by the history, character, and course of the lesions. The crust is a superficial one, and often has the appearance of being “stuck on.” The lesions are usually isolated and itch but little, in both of which points they differ from those of *eczema*. The pustule of *impetigo* is prominently raised; that of *impetigo contagiosa* is either flat or tends to become so. It may also bear a resemblance to *varicella*. Both affections usually show themselves about the face. The vesicles and vesico-pustules of *varicella*, however, are smaller, and are not attended with proportionately the same amount of crusting, nor are the crusts of the same character as regards their color and consistence. The usual distribution of *varicella* over various regions of the body will also serve to distinguish the diseases. The lesions of *varicella* are, furthermore, generally more numerous than those of *impetigo contagiosa*. Finally, the disease must be distinguished from *pemphigus*, and from *herpes iris*.

Treatment.—The mildest remedies are to be used, for the affection tends to spontaneous recovery. Oxide of zinc ointment, together with cleanliness, will often prove sufficient. An ointment composed of ten grains of ammoniated mercury to the ounce may also be used advantageously.

Prognosis.—This is always favorable.

ECTHYMA.

ECTHYMA IS CHARACTERIZED BY THE FORMATION OF ONE OR MORE DISCRETE, FLAT PUSTULES, THE SIZE OF A FINGER-NAIL, SITUATED UPON AN INFLAMMATORY BASE, FOLLOWED BY A YELLOWISH OR BROWNISH CRUST.

Symptoms.—The pustules are usually well developed. They may exist either singly or in numbers, as many as a dozen being

* Brit. Med. Jour., 1864; also in Jour. of Cutaneous Medicine, 1868.

sometimes present. They are roundish or ovalish in form, circumscribed, and generally exhibit a sharp outline. They are notably flat and broad, and consequently are seldom fully distended. At first they are yellowish in color; later, as a rule, they become somewhat reddish, owing to the admixture of blood. In size they vary from a small to a large finger-nail. Immediately around their margin the skin is generally of a bright-red color, forming an areola of considerable extent, which is usually firm and sensitive to the touch. After existing for a few days, the lesions become flaccid, begin to desiccate, and are converted into flat crusts of a brownish color. They are not adherent, and may be raised, when an excoriation, covered with a yellowish, sanious secretion, will be observed. The destruction of tissue scarcely amounts to ulceration. The extremities, especially the thighs and legs,* the shoulders, and the back, are the regions commonly attacked. The lesions have an acute course, developing and running their existence in from ten to fifteen days; after they have begun to crust, the process proceeds more slowly, and terminates in two or three weeks by the crusts falling off and leaving more or less pigmentation. The pustules are apt to appear successively during the first week or two. Where the cause is kept up, they may continue to show themselves for an indefinite period. The affection is sometimes annouced with slight febrile disturbance, which tends to subside upon the appearance of the eruption. Heat, more or less itching, and a certain amount of pain, accompany the lesions. Ecthyma is encountered upon both children and adults, and may occur at any time of life. It almost invariably manifests itself in those who are poorly nourished, overworked, and improperly cared for.

Etiology.—The causes of the disease are to be found in all those influences which tend to lower the normal tone. It is most frequently met with in prisons, poor-houses, tenement-houses, and among those who live in squalor and poverty. It is rarely seen in the upper walks of life, except in children, who are usually delicate and poorly nourished. Improper and insufficient diet, want of ventilation, excessive work, and uncleanness are all causes which may call forth the disease. In those predisposed to ecthyma,

* See Plate J J in my Atlas of Skin Diseases.

acquired through an existence among the influences mentioned, it may be produced by various external agencies or irritants, among which the animal parasites and scratching occupy a conspicuous place. It is not contagious. It is, however, auto-inoculable, even through several generations of culture, as proved by the experiments of Vidal.*

Pathology.—The affection is markedly inflammatory in character, and tends to the immediate formation of pus. The cutaneous disturbance is severe, as shown by the rapid development of the lesion, its size, and its firm, sensitively-inflamed base. It is a typical pustular process. Commencing as a pustule, it tends to assume speedily its definite proportions. The lesion is a superficial one, the excoriation not extending beyond the papillary layer of the corium. A slight sear is sometimes observed, which, however, is not permanent. Pigmentation also exists, which in a few weeks or months likewise passes away. In the colored race absence of the normal pigment is noted.

Diagnosis.—Ecthyma may be confounded with eczema pustulosum, impetigo, impetigo contagiosa, impetigo herpetiformis, and the large, flat-pustular syphiloderm. It may be known from eczema by the size and form of its pustules, as well as by the fact that they occur discretely. The inflammatory, firm base, with extended areola; the large, flat pustule; its course; the excoriation, and the yellowish, brownish, or blackish crust, will, moreover, serve to distinguish it from eczema. It may be known from impetigo by the character of the pustule and crust. It differs from impetigo contagiosa in its non-contagious nature, the character of the lesion, the color and appearance of the crust, the region involved, and the general condition of the patient. It is liable to be confounded with impetigo herpetiformis, the lesions of which may sometimes closely resemble ecthyma; the history of the case, the course of the pustules, the grouping, and the manner of their spreading in the former disease will aid in the diagnosis.

The disease bears a close resemblance to the large, flat-pustular syphiloderm.† Its course, however, is different from that of the

* Annales de Derm. et de Syph., t. ix. No. 5.

† I have found this to be particularly the case in the colored race, where the areola and color of the eruption are wanting.

syphiloderm; it develops itself more rapidly, and usually terminates in a few weeks. There is, moreover, more heat and pain, together with other signs of local disturbance, about ecthyma than about syphilis. The characters of the ulcers are sufficient to distinguish the two diseases: in ecthyma the ulceration is slight and superficial; in syphilis the edges are abrupt and more or less deep, and the excavation is covered with a thick, yellowish, puriform fluid. The crusts of ecthyma are brownish in color; in syphilis they generally have a duller or a dark-greenish tint. In ecthyma they are less bulky than in syphilis, and do not tend to heap up into layers. If the disease be syphilis, other symptoms will almost invariably be present, which will further aid in establishing the diagnosis.

Treatment.—The affection yields readily to the proper remedies. All means should be adopted for the purpose of reinstating good health. The diet is of importance, and should consist of the most nutritious and wholesome food, including meat, eggs, milk, ale, and other articles calculated to improve the tone of the system. The hygienic surroundings should be inquired into; cleanliness, bathing, fresh air, exercise, proper rest, should all claim attention. It is to be remembered that the affection is one caused by debility. Tonics, such as the preparations of iron, arsenic, quinine, strychnia, and the mineral acids, will prove of value. The local treatment will vary with the stage in which the lesions exist. During the first week, alkaline baths, four to six ounces of the bicarbonate of sodium to the bath, may be ordered; various cooling lotions may also be employed, as in eczema. Crusts are to be removed by poultice or water dressing, and a mild stimulating ointment as the following, applied:

R Ungt. Zinci Ox. Benz., \mathfrak{z} ^{ss};
 Vaselinei, \mathfrak{z} ^{ss};
 Hydrargyri Ammoniaci, \mathfrak{z} i.
 M. Ft. ungt.

If the disposition to recovery be sluggish, the sores may be touched with more stimulating substances, as the nitrate of silver or dilute carbolic acid, or with a solution of chlorinated soda. The attention should be directed to the possible presence of parasites and other external irritants.

Prognosis.—This is favorable. A few weeks usually suffice to restore the patient to health, provided a thorough change can be obtained and the treatment carried out.

PSORIASIS.

Syn., Lepra; Lepra Alphas; Alphas; Psora; *Germ.*, Psoriasis; Schuppenflechte; *Fr.*, Psoriasis.

PSORIASIS IS A CHRONIC DISEASE OF THE SKIN, CHARACTERIZED BY REDDISH, DRY, INFLAMMATORY, MORE OR LESS THICKENED PATCHES, VARIABLE AS TO SIZE, SHAPE, AND NUMBER, COVERED WITH ABUNDANT WHITISH OR GRAYISH, MOTHER-OF-PEARL COLORED, IMBRICATED SCALES.

Symptoms.—Psoriasis, like other inflammatory diseases of the skin, varies greatly as to the extent of its development, in one case showing a well-formed and typical eruption, in another imperfectly defined lesions. As a rule, however, it possesses characters which render it one of the most uniform and marked of all the cutaneous diseases. It commences by the formation of small reddish spots, which immediately become covered with scanty or abundant whitish, imbricated scales. The lesions at this stage usually increase rapidly in size, and often in a few weeks or months develop into patches as large as coins. The scales are present from the beginning, and are seated superficially upon the reddened and inflamed skin. The rapidity with which the first lesions sometimes extend is remarkable, especially when it is considered that the process soon settles into a chronic course. In other cases, however, the eruption is sluggish from its commencement, spreading slowly, and perhaps involving only a small portion of the body. The amount of skin attacked varies exceedingly; a great part or, in rare instances, even the whole surface may be the seat of disease. In other cases but a single small patch exists. As it is commonly encountered, it consists of numerous patches or islands of disease, scattered over the body, tending to run a slow but variable course. The patches, with perfectly healthy tissue between them, are quite characteristic, their generally sharp outlines causing them to stand out conspicuously. They may be either pale or bright red, or dark red, depending upon the amount of inflammation and locality, and are invariably covered with whitish or grayish, heaped-up scales, usually in such quantities as to mask more or less the color of the

skin beneath. The margin of the patch in these cases is marked. When of any size, the patches are often slightly raised and may have a perceptible inflammatory border; if the scales are plenty, the elevation is more manifest, in some cases rising to a considerable height, after the manner of a limpet-shell.

The scales are peculiar, and are characteristic of the affection. They are usually formed and cast off in great abundance; the more active the inflammation the larger the quantity produced and discharged, so that, although at all times present, the amount varies. They possess a whitish, glistening mother-of-pearl color; and are imbricated and form laminae, which adhere but slightly to their bed. They may be readily scratched off, and when the skin is denuded a reddish surface may be seen, which on being scratched inclines to bleed in the form of minute pin-point drops. But there is never any watery discharge, the patch always remaining dry and scaly. Fissures may exist, especially when the disease attacks the joints or parts exposed to motion; they may likewise occur upon large patches. The degree of inflammation attending the process varies. At times it is highly developed, as is manifested by intense redness, heat, swelling, and burning or itching, while at other times, and usually, these signs will be less marked. More or less itching, however, not infrequently attends the disease. Burning is also often a symptom when considerable surface is attacked with active inflammation. The affection is very rarely accompanied by any febrile disturbance. It is a conspicuously chronic disease, for, although individual patches may disappear, new ones generally show themselves, the disease in this way continuing for a long period. Even when all traces of it are lost for the time, relapses are the rule, which may occur at brief or at long intervals.

The eruption assumes different features as to the size and shape of the patches, some of which are of such frequent occurrence as to be worthy of special names. These terms simply denote the form or outline which the disease has taken on, and do not apply to any difference in the character of the anatomical lesions. When the disease occurs as a small, pin-head sized eruption, it is known as PSORIASIS PUNCTATA. This is a rare form of the disease, for, though all cases begin in this manner, they seldom remain in this state, but, as a rule, quickly pass on to larger forms. PSORIASIS

GUTTATA is the name given when the affection has assumed the form and size of drops, which, when covered with scales, look like drops of mortar. This is more commonly seen than punctata, though the process rarely stops at this stage for any length of time. PSORIASIS NUMMULARIS, where the eruption resembles variously-sized coins, is the next stage encountered. The lesions not infrequently cease to grow when they have arrived at this period, some being small, others large, and often remain in this condition throughout their career. At times the patches clear away in the centre, leaving the skin here normal, while they continue extending upon their periphery, after the manner of tinea circinata; when this occurs, the condition is called PSORIASIS CIRCINATA. These circles are apt to coalesce sooner or later in the course of their existence, forming broken semicircles and segments of circles, which may present a figured, festooned, or ribbon-like appearance, to which the name PSORIASIS GYRATA is given. When the patches are large, and irregular as to shape, covering a considerable amount of surface, the term PSORIASIS DIFFUSA is employed to express the condition. As regards the size of the individual patches, they differ very much according to the severity of the process and other circumstances. At times they attain great size, and may be from three or four to eight inches in diameter; where two or more patches have joined by their spreading into one another, extensive areas may exist, covering a considerable portion of a limb or the trunk.

The disease may occur upon any part of the body, though it manifests itself upon certain regions in preference. The extensor surfaces of the limbs are particularly prone to the eruption.* The elbows and knees are frequently first attacked, and patches may exist here without the disease being present elsewhere. The back is more commonly involved than the chest. The face is more rarely attacked, but the scalp is often the seat of the disease. The palms and soles may also be invaded, either alone or in connection with the affection upon other parts of the body, but the disease here is rare. The nails at times suffer, but seldom, if ever, unless the eruption exists also upon the skin. The disease offers certain differences in appearance as it exists upon one part of the body or

* See Plate B in my Atlas of Skin Diseases.

another. Upon the scalp it frequently shows itself in the form of gyrate or irregular bands or streaks. Occurring here it is apt to extend itself somewhat upon the non-hairy parts; thus, it is frequently seen about the ears, and upon the forehead near the line of the hair. When on the scalp alone, it is often difficult of diagnosis. Psoriasis probably never occurs upon the mucous membranes.* I have never seen it here. It is not contagious.

Etiology.—The cause of the disease varies in different cases, there being no one known cause which occasions the eruption. On the contrary, it is seen to arise in conditions of the body which are diametrically opposite to each other, as in anæmia and plethora. Unquestionably there exists in some individuals a predisposition to the affection, which may be inherited or be developed from some inappreciable cause. In these instances the disease tends to show itself at various times during the life of the patient.

Psoriasis is usually encountered in those who have the best of general health, in those who are well nourished and stout, and also in those who have otherwise a fine, clear skin. On the other hand, it is also not infrequently seen in persons who are much broken down in health, and in the spare and poorly nourished. Sometimes it is noted to make its appearance during lactation and to disappear spontaneously after weaning the child. Cases in which the reverse is true are also encountered. It occurs in both sexes in about equal proportion. It may make its first appearance at any time of life after early childhood, but, as a rule, it rarely shows itself before puberty. Stelwagon† records a case where it appeared at the age of three. This is unusually early. It never occurs in infants. The common period for its manifestation is at about the age of twenty, but it may also first appear much later in life. It may be inherited, but according to my experience it is rarely so. The disease in the majority of cases encountered cannot be traced to either father or mother. It is never produced by syphilis, nor in any way connected with this disease, either directly or remotely. Syphilis gives rise to certain forms of eruption which closely

* Cases of so-called psoriasis of the mouth, and especially of the tongue, are apparently not psoriasis, but other forms of disease. See papers by W. Fairlie Clarke, *Practitioner*, Aug. 1874, and *Brit. Med. Jour.*, March 14 and 28, 1874; also "Le Psoriasis Buccal," Paris, 1873, by Debove.

† *Phila. Med. Times*, vol. xi. p. 458.

resemble psoriasis, but true psoriasis—a simple inflammatory disease of the skin, attacking no other organ of the body—is an affection which must always be viewed as distinct from this disease.

It occurs among the rich and the poor, and is to be found among all occupations without noteworthy difference, affecting those who indulge in exercise as well as those who lead sedentary lives. It is one of the commonest diseases of the skin, taking rank numerically, in this country, after eczema and diseases of the sebaceous glands. The statistics of the American Dermatological Association furnish 533 cases out of 16,863 cases of skin disease.* According to White's report of 5000 consecutive cases of skin disease encountered at the Massachusetts General Hospital, 152 cases of psoriasis were recorded. In Scotland the disease is commoner than in this country, Anderson reporting 725 cases among 10,000 cases of skin disease.† The seasons possess some influence upon it, but not so much as upon some other diseases, as, for instance, eczema; it is usually worse during the winter. Food and drink have little or no effect in the original production of the disease, though when once the process has taken possession of the skin it may sometimes be modified by diet. It is at times noted to be associated with gout and rheumatism, although the relationship is not of so close a nature as that which exists between these diseases and eczema.‡ Clinically, in rare cases, there exists some relationship between psoriasis and eczema, as shown by the observations of Neumann, Campbell, and others.§

Pathology.—The disease has a pronounced character, from which it seldom varies, rendering the pathological process one of the most definite which is encountered upon the skin. The degree to which the inflammatory symptoms may attain is variable, and dependent

* Trans. Amer. Derm. Assoc., New York, 1879.

† For additional statistics, see Dr. White's valuable article, "Variations in type and in prevalence of diseases of the skin in different countries of equal civilization." Trans. Internat. Med. Congress, Phila., 1877.

‡ For further information upon this subject, see an able paper "On the Nature of the Gouty Vice," by Dr. Wm. H. Draper, of New York. American Clinical Lectures, vol. i. No. XII., 1876.

§ See Eczema, p. 181. Neumann and others also claim a traumatic origin for psoriasis; but the disease cannot be produced in this way unless there exists a disposition to its ready development. Viertelj. für Derm. und Syph., 1 und 2 Heft, 1877, p. 262.

upon the cause. The pathological anatomy has been studied by several investigators. According to Hebra, who has had opportunity of examining several cases of psoriasis after death, in patients who had died from intercurrent diseases, there remains but little to be seen upon the body. With the naked eye it is observed that the redness of the patches has left the surface, and that the scales are seated very superficially upon the skin. In opposition to the views formerly held, the disease is now regarded as an inflammation due to a hyperplasia of the mucous layer of the epidermis. Auspitz,* in an original and able article on the relation of the epidermis to the papillary layer, was one of the first to direct attention to the action of the cells of the rete Malpighii. Later, we find Tilbury Fox† enunciating views—founded on clinical observation and on the microscopic observations of Neumann‡—to the effect that the disease is not a true inflammation, but rather a “hyperæmia with hyperplasia of the epidermis,” consisting “primarily and essentially in a misbehavior of the cell elements themselves,—a perversion of the ordinary cell life of the epidermis.” More recently Dr. A. R. Robinson, of New York, has investigated the subject very thoroughly and arrives at similar conclusions supported by the microscope. According to Robinson,§ the disease is essentially a hyperplasia of the normal constituents of the Malpighian layer. The increase takes place chiefly in the interpapillary portion of the layer, the growth of which downwards causes an apparent increase in the size of the papillæ of the corium, which, however, on closer examination are found not to be enlarged. In the later stages of the disease the more superficial bloodvessels of the corium become dilated, a more or less considerable emigration of white blood-corpuscles takes place, and the immediate neighborhood of the vessels, together with the connective tissue of the corium, becomes the seat of a round-cell infiltration, which, with the effusion of serum, separates

* Archiv für Derm. und Syph. Erstes Heft, 1870.

† Diseases of the Skin, 3d ed., p. 264. New York, 1873.

‡ Neumann from his own studies interpreted the disease, on the other hand, to be an inflammatory process of the papillary layer and upper layers of the corium, accompanied by the excessive production of cells and enlargement of the papillæ.

§ New York Med. Jour., July, 1878.

the connective-tissue bundles and fibres into an open mesh-work. During the period of disappearance of the disease there is a gradual return to the normal condition until the hyperplasia, dilatation of the bloodvessels, and cell infiltration have completely disappeared. The hair in psoriasis is affected from the beginning of the disease, hyperplasia of the external root-sheath, the structure corresponding to the Malpighian layer of the epidermis, taking place, with extension of the hyperplastic structure into the surrounding cutis. The sebaceous and sweat glands are not at any time affected. Jamieson,* Tilbury Fox,† and Thin‡ have confirmed the correctness of Robinson's studies.

Diagnosis.—The diagnosis of typical psoriasis does not present any difficulty, but there are cases frequently encountered where the lesions are very imperfectly developed, and where the appearance of the disease calls for more than casual examination. According as the disease occurs upon one portion or another of the body, is it easy or more or less difficult of recognition; thus, when upon the trunk it is usually characteristic, while upon the scalp the lesions are often ill defined. Ordinarily it exists as a diffused or scattered eruption, extensively present over the various regions of the body, and by taking into consideration the whole aspect of the disease the difficulty in diagnosis will be greatly lessened. Where there is doubt, the history of the case may be referred to, a point which will generally be of material assistance in forming an opinion. Psoriasis may be confounded with eczema squamosum, syphiloderma squamosum, tinea circinata, lupus erythematosus, seborrhœa, and pityriasis rubra.

ECZEMA.—Occurring upon a limited portion of the body, it not infrequently bears a close resemblance to the squamous form of eczema. This is particularly the case when but one or two imperfectly-defined patches exist upon the arms or legs. The appearance of the two eruptions in these instances is often strikingly similar, and the diseases may readily be confounded. The symptom of itching may or may not be present in psoriasis, and therefore neither its absence nor its presence can be relied upon as a

* Edin. Med. Jour., Jan. 1879.

† Epitome of Skin Diseases. 2d Amer. ed., Phila., 1879.

‡ Brit. Med. Jour., Sept. 4, 1880.

means of diagnosis. In eczema, however, it is usually present to a much greater degree than in psoriasis. In the majority of cases of eczema there will be found also an account of the disease having been at some time in its course moist. Psoriasis, it is to be remembered, is invariably a dry, scaly disease, never showing any sign of moisture. The scales of psoriasis are much more abundant, larger, and whiter than those of eczema. The patches of psoriasis are usually well defined as to outline, while those of eczema generally exhibit an indistinct border, fading away into the healthy skin.

SYPHILIS.—Psoriasis and the papulo-squamous syphiloderm are frequently mistaken for each other, the diagnosis between them being at times extremely difficult. There are, however, points of difference which generally enable one to distinguish them. Psoriasis has a decided tendency to occur symmetrically; when present upon one side, it is the rule to find it on the corresponding part. This observation does not apply to the syphiloderm, for it seldom disposes itself with any degree of symmetry, except in connection with the palms or soles, and even here it is subject to variation. Psoriasis inclines to involve a large portion of the surface at the same time; the squamous syphiloderm rarely does. Psoriasis throws out an exuberant product in the shape of characteristic scales; in syphilis these are scanty. Psoriasis attacks remote parts of the body at the same time, as, for instance, the head and the lower limbs; syphilis confines itself, as a rule, to one region of the body. In psoriasis the elbows and knees are apt to be affected; in syphilis these regions are seldom involved. Occurring upon the palms or soles alone, the disease in the majority of cases will prove to be syphilis rather than psoriasis.

The color of the patches in both affections is reddish, but it is likely to be of a brighter and more inflammatory tint in psoriasis, while in syphilis it is dull red or ham-colored. The scales in psoriasis mask the color of the skin and give the patch a whitish or mother-of-pearl hue; in syphilis they are thin and scanty, and do not, as a rule, disguise the color of the skin. The infiltration in a patch of psoriasis is less marked than in syphilis, as determined by taking a fold of the skin up between the fingers. A psoriatic patch shows infiltration with inflammation; a syphilitic one, the deposit of a firm, new, cellular material.

The age of the patient may offer some clue to the diagnosis. In the majority of cases psoriasis will have manifested itself before the age of twenty; this form of syphilis rarely appears before adult life. The courses of the two diseases are different. Psoriasis generally lasts for years, either continuously or in an intermittent manner; syphilis seldom remains in one form for any length of time. Other points of value in the history may often be brought out. Itching may, but seldom does, accompany this form of syphilis; it is not uncommon, and is sometimes marked, in psoriasis. In obscure cases the effect of treatment will generally decide as to the nature of the lesion.

TINEA CIRCINATA.—Psoriasis at times resembles *tinea circinata*, but the patches of the latter disease are less inflammatory, red, and infiltrated. The scales in psoriasis are always more abundant than in *tinea circinata*; they are, moreover, larger, more bulky, and whiter. *Tinea circinata* shows no disposition to symmetry in the arrangement of the patches, nor are the knees and elbows affected. The microscope establishes the presence of a fungus in the scales of *tinea circinata*; no parasite is to be found in those of psoriasis. There is never any history of contagion in psoriasis; there usually is in *tinea circinata*.

SEBORRHŒA.—Seborrhœa not infrequently presents appearances similar to those of psoriasis, both on the scalp and on the body, about the back and chest. On the scalp the scales in seborrhœa are finer, smaller, and more disseminated than in psoriasis; they are, moreover, grayish or yellowish in color, greasy, and usually sebaceous in character. Psoriasis of the scalp occurs in distinct areas of disease; seborrhœa, as a rule, involves the whole surface. The patches of psoriasis are reddish and infiltrated; the scalp in seborrhœa is pale or hyperæmic, but is not infiltrated. Psoriasis rarely attacks the scalp without showing some signs at the same time upon the trunk or limbs; seborrhœa commonly has its seat upon the scalp alone.

LUPUS ERYTHEMATOSUS.—This disease can be mistaken for psoriasis only in its earliest stage. The involvement in the majority of cases of the sebaceous glands, as shown by their patulous ducts, will serve to distinguish it from psoriasis. Lupus erythematosus almost invariably attacks the face, being rarely seen upon other parts of the body; psoriasis seldom appears upon

the face alone. *Lupus erythematosus* presents yellowish, sebaceous scales; *psoriasis* presents whitish, dry, imbricated scales. *Lupus erythematosus* is chronic in its course; *psoriasis* is liable to change its seat and character from time to time.

Treatment.—This is to be considered under two heads, constitutional and local, both of which methods are of value. It is usual and proper to employ the two forms of treatment at the same time, for the disease is in the majority of cases most obstinate, demanding every available means for its relief.

CONSTITUTIONAL TREATMENT.—Before undertaking to prescribe for a case, there are a number of points which should be ascertained. The disease should first be viewed in its totality, and a thorough study made of its history before any plan of attack is adopted. It will be found that different methods of therapeutics are called for with the various cases that are met with, and that a course of medicine which would be of service to one case would be injurious to another. Attention should be directed to the general health of the patient: whether he be strong and fleshy or delicate and spare; also whether there be any functional derangement which might act as an exciting cause of the attack. Regard must be given to the duration and course of the disease; how long it has existed; whether it has been upon the patient continuously, or whether it has tended to come and go from time to time or at stated intervals; whether it is slight or extensive; and, finally, whether it is recent or of long standing. These and similar points are all of value in aiding us to institute a rational and satisfactory treatment.

Among the medicines of most use in treating *psoriasis*, arsenic must first be mentioned. For the majority of cases arsenic, given judiciously, is the most efficacious medicine at our command. I say judiciously, because it is often prescribed in improper doses, and the patient allowed to continue its use indefinitely, causing frequently toxic effects, without affording relief. Like other potent drugs, it should be administered with due regard to the general condition of the patient's health, which should never be permitted to become deranged. The individual should be warned against its possible disagreeable effects, and should also be under the surveillance of the physician. The toxic symptoms should not be allowed to occur, for they are not only annoying, but are some-

times positively injurious to the patient. Arsenic is by no means suitable for every case of psoriasis; nor is it to be prescribed in every stage of the disease. If given in the acute stage it is liable to do more harm than good. It may be said, the less active the pathological process the more likely is it to be of benefit. If the affection, then, be attended with highly inflammatory symptoms, it is expedient to withhold its administration until this stage has relatively passed away. The less irritability, heat, itching, and infiltration about the patches, the greater the chance of the arsenic relieving the disease. It is an error to think that arsenic is useful in all stages of the disease. To procure good results, discretion must be exercised in its exhibition.

In order to obtain the remedial effect of arsenic it is generally necessary to continue its employment for a considerable time, not infrequently for months, although improvement is usually observed in the course of weeks. It should be continued for some time after the symptoms have disappeared, the dose being gradually decreased. The most desirable form of administering it is the liquor potassii arsenitis, which admits of convenient mixing with other medicines, with which it may be prescribed. It may be given with wine of iron, or with a bitter infusion, as gentian or columbo, or with syrup of orange-peel or ginger and water. It should never be prescribed alone, or pure, the patient being directed to take so many drops for each dose. This mode has numerous disadvantages, chief among which are that an uncertain number of drops are liable to be taken, through carelessness on the part of the patient, and also that when taken insufficiently diluted it is apt to disorder the stomach. It should be properly diluted with water and taken directly after meals. It is ordinarily convenient to order a four ounce mixture, a fluidrachm being given for each dose, three times a day.

A formula which I frequently prescribe is the following:

R Liq. Potassii Arsenitis, $\text{f}\overline{\text{ss}}$;
Vini Ferri, $\text{f}\overline{\text{ss}}$ iv.

M.—Sig. One teaspoonful, with a wineglassful of
water, three times daily, directly after meals.

The dose here is three minims, an average dose. In an adult it is best to begin with not more than three minims, which quantity

may from time to time be increased. Four, five, and even ten minims will often be tolerated; but, taking a number of individuals, it will be found that the majority will not be able to take more than three or four minims for any length of time without derangement of the system. Arsenious acid, in pill form, may also be prescribed. The Asiatic Pills, as they are called, are employed in various strengths, and have some reputation in the treatment of psoriasis; but they are liable to produce gastric disorder, and are not tolerated so well as Fowler's solution. Their composition is as follows:

R Acidi Arseniosi, gr. ii;
 Piperis Nigri, ℥ii;
 Pulv. Glycyrrhizæ Rad., ℥ii.
 M. Ft. in pil. no. xl. div.
 Sig.—One pill, three times daily, immediately
 after meals.

The unpleasant symptoms arising from the use of arsenic should always be borne in mind, so that should they occur they may not be overlooked. They vary exceedingly. There are some persons who are extremely susceptible to its influence, and who are poisoned by it with the smallest dose. I have known half-minim doses to be sufficient to bring on alarming symptoms, such as redness, heat, dryness and irritability of the fauces, pain in the eyeballs, watering of the eyes, injection of the conjunctivæ, pains in the head, and derangement of the alimentary canal. Several of these symptoms are usually present when the individual is under the toxic effect of the remedy, whether from a small dose, on account of an idiosyncrasy, or from a larger quantity saturating the system. Under such circumstances the medicine should be discontinued for a time, and a repetition of the accident guarded against. The disagreeable effects usually subside at once upon the suspension of the remedy. Arsenic is a safe medicine when given under the care of a physician; but it should not be prescribed incautiously, any more than mercury or strychnine.

Iron may be mentioned as being of some value in certain cases of the disease. It sometimes acts beneficially where there is lack of normal strength and tone. In women who have been nursing, in young persons of spare frame, and in those broken down in general health, it may prove of service. In the same class of

cases cod-liver oil may sometimes be ordered with good result, and a combination of this remedy with iron may be employed with advantage. But the cases must be selected if improvement is to be looked for.

Phosphorus has been used with some success, although it cannot be regarded as a reliable remedy. It has been used by Hardy, Eames, and others, with varying results. According to my experience, it usually produces gastric disturbance. The phosphide of zinc may also be used. Tar also may be prescribed with some hope of a cure; Anderson speaks in favor of its efficacy in cases where arsenic and other remedies have failed. It should be given in the form of capsules, in from three to five minim doses, thrice daily. Carbolic acid is indicated in the same class of cases as the tar, and sometimes will be found efficacious. According to McCall Anderson, it is especially useful in chronic psoriasis where the patches are not much infiltrated. It may be given in from three to ten grain doses thrice daily. Anderson endorses it, and gives the following formula for its administration :

R Acidi Carbolici, ꝑiii;
Glycerinæ, fʒi;
Aquæ Destillatæ, fʒv.
M.—Sig. One teaspoonful, in a large
wineglassful of water, before meals.

The free use of alkalies sometimes proves of the greatest service. In patients who have a rheumatic or gouty tendency, or even where these conditions do not exist, liquor potassæ may be prescribed with benefit in ten or twenty drop doses, largely diluted. I find it a valuable remedy. In these cases the salts of ammonium, potassium, and sodium are also serviceable. The carbonate of ammonium, in from ten to thirty grain doses, is favorably spoken of by Anderson. The acetate of potassium, in half-drachm doses, is also a remedy from which I have sometimes obtained good results in highly inflammatory cases. The various natural alkaline springs may also be prescribed, as those of Vichy and Saratoga (Vichy Spouting Spring). Saline purgatives may occasionally be of value in promoting a better condition of the general health; but they are to be employed only to correct manifest derangements.

The diet in psoriasis is to be prescribed according to the require-

ments of the case in hand. As a rule, it matters little what psoriatic patients eat or drink, the disease not appearing in any way to be influenced by the amount or kind of food taken. Exclusive animal diet, taken for a period of weeks, is known to have been followed by the disappearance of the disease, as in the well-known case of Dr. Passavant, of Frankfort, Germany. Unfortunately, however, such a happy result is exceptional. In a severe case which seemed suitable for this mode of treatment I instituted a strict meat diet for three weeks, with no appreciable result; afterwards, a strict vegetable diet, at the end of which time the patient was about in the same condition as before treatment.

LOCAL TREATMENT.—The use of external remedies must vary according to the duration of the disease, its extent, location, obstinacy, and the stage in which it exists. Regard, too, must be paid to the individual whom we have to treat, whether, for example, the patient be a man, a woman, or a young person, and whether it be practicable to carry out the plan that may seem most desirable. It is necessary to bear in mind that a course of treatment which could be successfully accomplished in the ward of a hospital would be impracticable in the rooms of the poorer classes.

The first point to be gained is the thorough removal of the scales. This may be done in one of several ways: by repeated washings with soft soap and water, by means of plain or alkaline baths, by detergent washes, or by caustic ointments. The bath is of especial service, accomplishing the object much more effectually and agreeably than any other method. When possible, it is always to be employed, for in no affection of the skin is it more beneficial than in this disease. The psoriatic patient of experience knows full well the comfort and benefit to be derived from its use. Preismann* recommends for removing the scales an alcoholic solution of salicylic acid, in the strength of one to sixteen.

If the case be an acute one, with highly inflammatory symptoms, soothing applications, either of water or of bland oils or ointments, must be used, for the skin at this period will seldom tolerate the powerful stimulants which are in place in the later stage of the

* Wien. Med. Presse, No. 16, 1879.

disease. Inunction with olive oil often proves serviceable in these cases, the patches being rubbed with the oil several times in the course of the twenty-four hours. Duckworth, of London, speaks well of the treatment, and I can also add my testimony to its efficacy. The majority of cases, however, when they present themselves to the physician, are chronic, and are ready for stimulating applications. The patches having been deprived of their scales, one of the tarry preparations may be applied. These constitute our most useful remedies. Occasionally cases present themselves where they are not tolerated, even in the smallest quantity. Remembering this fact, it is proper never to apply any preparation of tar over a large surface until it has been ascertained that it agrees with the skin. Where there is an idiosyncrasy, or where tar is not suited to the case, the parts to which it has been applied immediately become red, swollen, hot, itchy, or painful. In the majority of cases, however, it is well borne and is of great service.

Pix liquida, or common tar, oleum cadinum, or oil of cade, and oleum rusci, or oil of white birch, may be used. All of these preparations are efficacious, and may be compounded in various ways. An ointment composed of from one to two drachms of tar or of oil of cade to the ounce of lard, or of equal parts of oxide of zinc ointment and petroleum ointment, may be ordered. Wilkinson's ointment, modified by Hebra as follows, will also be found useful:

R Sulphuris Sublimati,
Ol. Cadini, āā ℥iv;
Saponis Viridis,
Adipis, āā ℥i;
Cretæ Præparatæ, ℥iiss.
M. Ft. ungt.

Another preparation consists in a drachm or more of the oil of cade to the ounce of alcohol, likewise to be rubbed into the patches, with a piece of flannel or a stiff brush. In the application of any of the preparations it is of some moment that they should be used in small quantities and effectually worked into the skin. They should be firmly rubbed into the part, and not smeared upon the surface. This is an important point, and the physician should see that it is properly carried into execution. The cleansing of the patches and the application of the ointment or liquid should be

attended to once or twice daily. The so-called tar bath may also be employed. It consists in freeing the patches of scales by means of potash soap, and applying tar or one of the derivative oils, and allowing the patient to remain in a warm bath for several hours. A mixture proposed by Hebra, composed of equal parts of *pix liquida*, alcohol, and *sapo viridis*, constitutes a preparation which is used with benefit in obstinate cases. Anderson has given it the name of "*tinctura saponis viridis cum pice*." Gnyot's solution of tar, known as "*goudron de Guyot*," is a valuable preparation. It possesses the advantages of mixing with water in all proportions, does not emit such a pungent odor, and does not color the skin to the same extent. The "*liquor picis alkalinus*," referred to in considering the treatment of eczema, is a similar preparation, and may be used in the same manner as in eczema. The "*liquor carbonis detergens*," mentioned in eczema, is also useful. For most cases, however, ointments are to be preferred.

Occasionally tar gives rise to symptoms of systemic disturbance, produced by its absorption. Of these, fever, headache, vomiting of dark-colored fluid, discoloration of the feces and urine, may be mentioned. Upon its suspension, however, the symptoms subside, and are not followed by serious consequences. The greater the surface coated with tar, the more likely is absorption to take place. In the treatment of a case of psoriasis of ordinary severity it is rare to note any such effects. The long continuance of the use of tar is at times followed by an inflammation of the sebaceous glands. Creasote may also be used in the form of an ointment, varying in strength from a drachm to four drachms to the ounce. Squire speaks well of it in the strength of two ounces to one ounce of simple cerate. Turpentine will also sometimes prove serviceable.

In cases where it is not practicable to apply the tar, on account either of the odor or of its disagreement with the skin, other ointments may be prescribed and used in a similar manner. Carbolic acid, as a lotion or ointment, will often prove valuable, though much inferior to tar. Crocker* regards thymol as a substitute for the tarry preparations, which possesses the advantage of being colorless and of having a not disagreeable odor. It may be used as

* Brit. Med. Jour., Feb. 16, 1878.

an ointment in the strength of from five to thirty grains to the ounce. Where the patches are small and limited in number, good result may be obtained from the ointment of the nitrate of mercury, either in its officinal strength or weakened,—from one to four drachms to the ounce. The biniodide of mercury, from ten to thirty grains to the ounce, is likewise a useful remedy, much esteemed in France. The officinal white precipitate ointment, or an ointment of the protiodide of mercury, fifteen or twenty grains to the ounce, may also be mentioned as being serviceable. From five to fifteen grains each of the white and red precipitate to the ounce also constitutes a valuable ointment, much used in England. The oleate of mercury remains to be mentioned. It is of undoubted value, and may be used in from five to twenty per cent. strength. Combined with tar ointment I find it very valuable in many cases, especially in psoriasis of the scalp. Lotions of corrosive sublimate may also be referred to as being sometimes of service. It is advisable, however, to limit the application of the mercurial ointments to comparatively small portions of surface, on account of the liability of absorption. In cases where the patches are the size of a coin, and obstinate, they may, as recommended by Anderson, be treated successfully with a cantharidal blistering fluid. The dermal curette has also been recommended in these cases, especially in conjunction with tar or other remedies. My experience with it, however, has not been satisfactory. Acetic acid will also sometimes prove serviceable.

The treatment by chrysophanic acid, or chrysarobin, as Liebermann determines the substance to be, introduced to the profession by Squire, may here be referred to. It is a golden-yellow crystalline powder, soluble in alcohol, benzole, and hot fat, derived from "goa-powder" (a product of a Brazilian tree), which for a long time has had a reputation in Eastern countries as a parasiticide. It is best used in the form of an ointment, varying in strength from ten grains to one drachm to the ounce of lard or of petroleum ointment.* Squire and Kaposi give formulæ for its preparation as strong as two drachms to the ounce; but in these

* As found in the market, it varies considerably in strength as it comes from one or another source. Caution should therefore be exercised in ordering the remedy, it being prudent to begin always with a weak ointment.

proportions it is to be handled with care. After a few applications the scales disappear, and the patches become whitish with a purplish, brownish discoloration about their edges and over the skin with which the ointment has come in contact. The remedy is a potent one and acts rapidly on the disease, destroying the lesions in some cases with remarkable celerity. Much has been said in praise of the treatment by many dermatologists since its introduction a few years ago, while, on the other hand, others have been unwilling to accord the remedy such a high position. It has, as is well known, disadvantages, which, in my opinion, are serious and tend to render its use limited. It is liable to irritate and inflame the skin, causing an acute dermatitis, characterized by a variable degree of swelling, heat, itching, and pain, sometimes by follicular or furuncular inflammation, and always by a variegated purplish or mahogany-colored staining of the skin. The dermatitis not infrequently extends to the sound skin beyond the part to which the remedy was applied, and it may even appear in distant regions. Constitutional symptoms may also manifest themselves. The remedy should never be applied to the head, swelling and œdema of the eyelids being particularly liable to occur, nor over an extended surface. It contains a dye-stuff which, as stated, stains the skin badly, also the hair, the nails, and the linen of the patient. In all cases the preparation used should at first be weak, and applied to a small surface, until its strength and the sensibility of the skin have been ascertained.

A similar, valuable, and less objectionable remedy exists in pyrogallie acid, which bears a chemical relation to chrysophanic acid, and was first used in the treatment of psoriasis by Jarisch. It is best employed as an ointment, in the strength of from ten to forty grains to the ounce. A drachm and a half to the ounce may sometimes be used, for example, on the scalp, but stronger preparations act as caustics. It is painless, and causes no inflammation of the surrounding skin, but produces a brownish stain upon healthy as well as upon diseased skin. It also dyes the hair, light hair becoming brownish; black hair is not much affected. Its action is slower than that of chrysophanic acid, but is effective. It should not be used over the whole surface, for the reason that constitutional symptoms, such as strangury and greenish or blackish urine, with fever, due to absorption, may occur.

The benefits to be derived from the systematic use of *sapo viridis* in the treatment of psoriasis, as recommended by Hebra, demand a few words. This soap, which possesses caustic properties, may be rubbed into the patches without water and allowed to remain. The operation should be repeated twice a day for four or six days; then once a day, until about the tenth day; after which the patient is directed to apply nothing for five days, when a bath may be ordered. The bath should not be taken until the epidermis has begun to loosen itself; if water be applied while the soap is still being used, or before the exfoliation has occurred, tension and a disagreeable sense of shrinkage of the skin, with fissuring, will happen.

The soap, with water, or with alcohol, in the form of the "*spiritus saponatus kalinus*" of Hebra, composed of two parts of soap and one of alcohol, may be employed with excellent result in psoriasis of the scalp. This may be followed by the "*tinctura saponis viridis eum pice*" or by a mixture of oil of cade and oil of sweet almond, a drachm to the ounce. Carbolic acid, ten or twenty grains to the ounce of alcohol or glycerine and water, is also useful. In obstinate patches of psoriasis, of limited size, a solution of sulphuret of calcium may be employed with excellent result, as in the following formula:

R Calcis, \mathfrak{Z}^{ss} ;
Sulphuris Sublimati, \mathfrak{Z}^i ;
Aquæ, \mathfrak{Z}^x .
Coque ad \mathfrak{Z}^{vi} , deinde filtra.
Sig.—"Vlemineckx's Solution."

This may be perfumed with oil of anise, five or ten drops to the ounce. It should be rubbed into the part with a piece of flannel, until slight bleeding takes place. The patches should then be bathed with cold water and afterwards anointed with a bland oil or cerate. The treatment is generally effectual, but is sometimes painful; it should not be used where the disease is extensive.

Mention has been made of the bath only as a means of getting rid of the scales; it is also to be considered as a curative remedy. Various mineral baths are at times of benefit in relieving the disease, if not effectually at least temporarily; they should be em-

ployed continuously for several hours daily. Those containing sulphur are to be especially recommended.

In cases where the eruption is localized, good service may be obtained from cold-water packing. The part—as, for example, a limb—is to be wrapped with a cloth wrung out of cold water, and this enveloped in oilskin, paraffine paper, or some other impermeable dressing. It may be done at night and allowed to remain on till morning. More extensive methods of cold packing may also be employed with advantage, the whole body being treated in the same manner with wet sheets, and surrounded by blankets in the place of oilskin. The patient should be enveloped and tied up with the sheet, and well wrapped up in a blanket. After remaining in this condition for an hour or two, a cold plunge bath may be taken, to be followed by a walk or exercise of some kind. Abundance of drink should be permitted the patient, thereby promoting perspiration. The process may be repeated once or twice in the twenty-four hours.

Prognosis.—As a rule, psoriasis tends to frequent relapses. An attack may last a few months, and under appropriate treatment be made to disappear completely. After an interval of an indefinite period, it will, however, usually again show itself. In severe cases relapses may occur continually, the patient rarely being entirely free of the disease. On the other hand, psoriasis of a mild type—of which instances are not infrequent—must receive a more favorable prognosis. Each case encountered, however, will be found to possess certain peculiarities, which must be consulted as regards treatment. Psoriasis left to itself runs a variable course, which it is impossible to predict, inasmuch as its manifestations are often capricious. It is one of the most stubborn of the inflammatory diseases of the skin, and, as a rule, is rebellious.

PITYRIASIS RUBRA.

PITYRIASIS RUBRA IS AN INFLAMMATORY DISEASE, INVOLVING USUALLY THE WHOLE SURFACE, CHARACTERIZED BY RED COLORATION, AND ABUNDANT AND CONTINUOUS EXFOLIATION OF EPIDERMIS IN THE FORM OF LARGE, THIN, WHITISH SCALES.

Symptoms.—The affection usually begins in the form of small, red, scaly patches upon one or various regions of the body. These

increase in size and coalesce, forming larger patches, which may in a short time invade the greater portion or the entire surface. The disease usually makes its appearance rapidly. The surface is uniformly reddened and covered with whitish or grayish scales, which are being continually cast off and reformed. The color may be a pale, vivid, or violaceous red. The scales are, as a rule, extremely abundant, and are composed of thin, dry, papery, exfoliated epidermis. They are large, varying in size from two or three lines to an inch or more in diameter. They are sometimes more appropriately termed flakes, and may resemble in outline the tiles of a roof, one overlapping the other. They are loose; free at one or more edges; more or less curled up; and may usually be picked off without causing pain. When the skin is deprived of the scales it possesses a somewhat shining aspect. When the disease is marked, the desquamation is rapid and abundant, large amounts of epidermis being shed in the course of the twenty-four hours. During the night, one, two, or more handfuls may be formed, loosened, and accumulated in the bed.

The skin, as a rule, is not at all thickened; it may usually be pinched up between the fingers, and in this respect differs from the skin in psoriasis and eczema. Sometimes, however, in chronic cases there is here and there considerable thickening. But the amount of infiltration will vary, and the presence of this symptom should not exclude the disease.* The process is always dry. It is usually superficial in character, only the upper layers of the skin in most cases being involved. At times there is œdema, especially of the limbs; stiffness of the joints may also be present. Fissures seldom occur. The nails may or may not be affected; in severe cases they may be softened and in a state of exfoliation. The whole surface is usually affected, no region remaining exempt. The palms and soles sometimes escape.

Usually there are no marked itching or burning sensations. The patient complains rather of the disagreeable condition of the skin than of decided subjective symptoms. Occasionally, however, in grave cases, these symptoms may be present, coming and going

* See an instructive case, which was under my observation in the University Hospital for six months, where there was considerable thickening of the skin, *Phila. Med. Times*, Jan. 17, 1880.

from time to time. It has been noted in most cases that patients readily feel the cold or suffer from a more or less constant feeling of chilliness. Constitutional symptoms may or may not be present; as a rule, they are slight or altogether absent. In some cases, however, they have been recorded as being severe, consisting of repeated febrile attacks, marked elevation of temperature, and signs of general disturbance. The disease may be either acute or chronic, more often the latter; it may continue months or years. Relapses are not uncommon. The affection may last for years, recurring in attacks, as in Dr. McGhie's case, which was under observation through a period of seventeen years, during which time many relapses took place. It is a disease of adult life, occurring usually at middle age, and is very rare. It was first described by Devergie.* The causes are obscure.

Pathology.—From the investigations of Hans Hebra † it appears that in the earlier stage of the disease, and perhaps in milder cases throughout, while there is a decided cell infiltration in the various strata of the corium and rete, yet the general form of the papillæ, together with the normal appearance of the glands and hairs, is preserved. In severe and long-continued cases, however, the changes in the cutaneous tissues are decided. An abundant proliferation of cells is found in all the strata, but more especially immediately under the epidermis. This is somewhat thickened, and underneath follows a thin layer of compressed rete cells abundantly interspersed with infiltration cells. Below this is a thick flattened layer of connective tissue somewhat less filled with infiltration cells, and below this still a layer of thick elastic tissue thrice the thickness of the three upper layers just described, and containing a deposit of yellow pigment granules. The papillæ are entirely obliterated, the layers described lying flat upon one another. The bloodvessels distributed to the sub-epidermal tissues are surrounded by abundant cell infiltration. Sweat and sebaceous glands are almost or entirely wanting. The scanty hairs show cell infiltration about their sheaths.

Diagnosis.—The disease is liable to be confounded with eezema squamosum, psoriasis, lichen ruber, and pemphigus foliaceus. It

* *Traité pratique des Maladies de la Peau*, p. 442. Paris, 1857.

† *Viertelj. f. Derm. und Syph.*, 4 Heft, 1876.

bears a resemblance to all of these affections, but can scarcely be confounded with them if the characters be borne in mind. It differs from erythematous and squamous eczema in its superficial nature and universal distribution; in the absence of marked thickening of the skin; in the peculiar formation and character of the scales, their rapid production and abundance; and, finally, in the absence, as a rule, of itching and burning. Psoriasis rarely invades the whole or even the greater portion of the surface; pityriasis rubra, as a rule, attacks the whole surface uniformly. The scales, moreover, are different in these two diseases, and are usually alone sufficient to establish the diagnosis. In psoriasis there is always more or less thickening of the patches; and, where the process is active, there is considerable itching or burning. Pityriasis rubra may be mistaken for pemphigus foliaceus, which it may resemble as regards distribution and the character of the exfoliation. In pityriasis rubra, however, there is no attempt at the formation of bullæ, the process being always dry.

Treatment.—Treatment in most cases has been unsatisfactory. It should be directed upon general principles, and must vary somewhat with the case under consideration. Locally, inunctions with bland oily substances are indicated. The remedies should be soothing rather than stimulating. Strong remedies are seldom tolerated. Internally, saline aperients, diuretics, iron, quinine, and arsenic may be prescribed, as may seem indicated.*

PITYRIASIS ROSEA.—This disease was first described by Gibert,† and was so named by him. Later, Bazin,‡ Hardy, §and Horand|| referred to it under the name of “pityriasis maculata et circinata.”

* Interesting cases of this disease have been reported by McGhie, Glasgow Med. Jour., 1858, vol. v. p. 431; Wilks, Guy's Hospital Reports, 1861, p. 310; Wilson, Med. Times and Gaz., Jan. 29, 1870; Benson and Smith, Dublin Jour. of Med. Sci., vol. xlix. p. 451; Tilbury Fox, Lancet, Jan. 1874, p. 294; G. H. Fox, Arch. of Derm., July, 1875, p. 296; Finny, Dublin Jour. of Med. Sci., March, 1876; Hans Hebra, loc. cit.; and McCall Anderson, Brit. Med. Jour., Dec. 8, 1877.

† *Maladies de la Peau*, 3e édit., p. 402. Paris, 1860.

‡ *Affections cutanées de nature arthritique et dartreuse*, p. 200. Paris, 1868.

§ *Leçons sur les Maladies de la Peau*, p. 204. Paris, 1868.

|| *Annales de Derm. et de Syph.*, t. v. No. 5 (1875-76).

It has also been recognized in Germany by Behrend.* I have elsewhere described it at length.† It is an inflammatory disease, of a mild type, occupying chiefly the trunk, more particularly the subclavicular, lateral thoracic, and scapular regions, characterized by discrete or confluent macular or slightly raised maculopapular lesions, usually the former, varying in size from a pin-head to a silver half-dollar. They are usually the size of a split pea or silver dime. They are rounded, circular or ovalish, sharply circumscribed, superficially scated, and are either on a level with the surrounding skin or slightly elevated, or, on the other hand, depressed, so that their border often presents the appearance of a ring. In color they are generally rosy or pale red, with later a more or less yellowish or tawny tint; in other cases the red is deeper and the coloring mottled. The surface of the patches is always dry and more or less scaly, the desquamation being furfuraceous, and, as a rule, scanty, similar to that of *tinea versicolor* and *tinea circinata*. It is usually more pronounced about the borders of the lesions, which incline to heal in the centre and to spread on the periphery. The skin is but little thickened, and sometimes feels almost normal when taken between the fingers. The subjective symptoms are variable; in some cases there is decided itching, especially noticeable when the patient is overheated, while in other instances the individual is scarcely made aware of the existence of the eruption.

The course of the disease in my experience is quite uniform as to duration, the lesions usually lasting from one to three months, when spontaneous involution sets in, recovery taking place, with increased desquamation and pigmentation, within a fortnight or a month. The onset of the disease may be sudden or gradual, new lesions appearing from day to day or from week to week. They are in most cases numerous and situated close to one another, in which event as they enlarge they incline to coalesce, forming variously sized and shaped, often large, macular or circinate patches. Thus, as in *tinea versicolor*, the whole chest or the neck may be invaded by a continuous or broken-up patch.

Horand seems to have encountered the disease only in children.

* Berl. Klin. Wochenschr., No. 38, 1881.

† Amer. Jour. of Med. Sci., Oct. 1880.

I have met with it chiefly in adults, of both sexes, who have been in average general health. The disease is a benign one, and is not contagious. It is rare. It may be confounded with *tinea circinata*, *tinea versicolor*, *seborrhœa corporis*, *lichen ruber*, *psoriasis*, and *syphilis*, more especially with the two first named, which it may closely resemble. It has the general appearance and the course of a vegetable parasitic affection, but microscopic examinations of the scales fail to show any fungus. In all of the cases encountered by me the disease was well marked and conspicuous, invaded large tracts, and ran a course terminating in spontaneous recovery.

DERMATITIS EXFOLIATIVA.—Under the names “*dermatitis exfoliativa*,”* “*general exfoliative dermatitis*,”† “*recurring exfoliative dermatitis*,”‡ “*desquamative scarlatiniform erythema*,”§ “*recurrent acute eczema*,”|| “*acute general dermatitis*,”¶ “*recurrent exfoliative erythema*,”** cases representing unusual and in some instances grave forms of disease have been described, which are to be distinguished from the recognized varieties of *eczema* and *psoriasis*, and from *pityriasis rubra* and *pemphigus foliaceus*. Eruptions of a similar character may also follow wounds and injuries, as in the cases of scarlatiniform rashes reported by Sterling.†† This observer classes them as vaso-motor eruptions, and regards them as similar to the rashes which occur in recently-parturient women from the third to the fifth day after confinement.‡‡ Much diversity of opinion exists as to the true nature of the cases which have been thus described, and it is difficult to determine from the reports whether they illustrate the same process or differ-

* Wilson, *Diseases of the Skin*, London, 1867.

† Baxter, *Brit. Med. Jour.*, vol. i., 1879; also Pereheron, *Étude sur la “dermatite exfoliative généralisée,”* Paris, 1875; and Jamieson, *Edin. Med. Jour.*, April, 1880.

‡ Bulkley, *Arch. of Derm.*, July, 1878.

§ Féréol, *Bull. Gén. de Thérap.*, Feb. 15, 1876. Abstract in *Phila. Med. Times*, March 18, 1876.

|| Fagge, *Guy's Hospital Reports*, 3d Ser., vol. xiii., 1868.

¶ Pye-Smith, *Guy's Hospital Reports*, 3d Ser., vol. xxii., 1877.

** G. H. Fox, *Arch. of Derm.*, July, 1879, p. 264.

†† St. George's Hospital Reports, vol. x., 1879.

‡‡ See Kidd's article on this subject, *Dubl. Jour. of Med. Sci.*, April, 1880.

ent diseases. Fagge's case, for example, was regarded by him as being a doubtful one of eczema, but was called so (with a mark of interrogation) for want of a better name. It seems to me, however, not to have been an eczema, but rather an example of a peculiar and rare disease, which for the present we may designate dermatitis exfoliativa, an instance of which I have observed.

Bulkley's case shows doubtless the same disease in a localized form, the hands and feet only having been invaded. Féréal's case was a general scarlatina-form exfoliative dermatitis accompanied with slight febrile disturbance, and followed by free desquamation, which in the several relapses was always entire, and was probably another variety of the same disease. I have seen one marked instance of this form of disease which at first closely resembled scarlatina in the cutaneous symptoms, but which, viewing it as a whole, could not possibly have been confounded with eczema, psoriasis, pityriasis rubra, or pemphigus foliaceus. In passing, I would direct attention to the more than probable relationship pathologically between certain cases of localized dermatitis exfoliativa (as, for example, Bulkley's case) and some cases of the so-called cheiro-pompholyx which have been reported.

In all of the cases entitled to the name dermatitis exfoliativa the process, whether localized or generalized, was characterized by an acute erythematous, more rarely vesicular or bullous, inflammation, with more or less marked febrile disturbance, accompanied or followed by varying degrees of desquamation or exfoliation of the epidermis, and marked by a tendency to relapses.*

* Ritter (Centralzeit. für Kinderheilk., Oct. 1, 1878; also Viertelj. für Derm. und Syph., Heft 1, 1879) describes, with the name "exfoliative dermatitis of nursing children," a non-contagious disease which makes its appearance from the second to the fifth week, characterized by redness and desquamation, at first local but later general, with thickening of the epidermis and the exudation of a thin layer of fluid beneath the same. The epidermis was thrown off in large masses, leaving the skin of a dark-red color, presenting an appearance like an extensive burn. The hands and feet were particularly affected, from which regions the epidermis peeled in large patches. Several varieties of the disease were observed, one in which vesicles and blebs formed. Desiccation occurred rapidly. The disease is differentiated by Ritter from eczema, but it would seem to have a relationship to it. It was observed chiefly at the Foundling Asylum in Prague, where in ten years nearly three hundred cases were noted. The mortality was fifty per cent. I have never encountered the disease.

FURUNCULUS.

Syn., Furuncle; Boil; *Germ.*, Blutschwär; *Fr.*, Furoncle.

FURUNCULUS IS A DEEP-SEATED, INFLAMMATORY DISEASE, CHARACTERIZED BY ONE OR MORE VARIOUSLY SIZED, CIRCUMSCRIBED, ROUNDED, MORE OR LESS ACUMINATED, FIRM, PAINFUL FORMATIONS, USUALLY TERMINATING IN CENTRAL SUPPURATION.

Symptoms.—Furunculi may occur singly, or, as is oftener the case, in numbers. Commonly, they appear in successive crops, two, three, or half a dozen making their appearance at the same time, to be followed after they have disappeared by another invasion (FURUNCULOSIS). They are generally isolated, and are apt to occur at points distant from one another. The lesion first shows itself as a small, rounded, imperfectly defined, reddish spot, situated in the true skin; even at this stage it is usually highly inflammatory and tender to the touch. It increases in size gradually, and becomes slightly raised, its central point exhibiting inclination to suppurate. In about a week or ten days it arrives at its full development. When mature, it consists of a slightly raised, rounded and pointed, inflammatory formation, its centre being marked usually by circumscribed suppuration, termed the "core." At times no core forms, when it is called a "blind boil." In size it is extremely variable; it may be as small as a split pea, or as large as a silver half-dollar. Its color is deep red, which is more intense towards the centre, gradually fading away on the periphery, in the form of an areola. The pain is of a dull, throbbing nature, and is usually worse at night. It increases in intensity until suppuration and discharge take place, after which it subsides. Remarkable tenderness is also a characteristic of the boil, the slightest contact causing suffering.

The furuncle may attack any portion of the body, no region being exempt. It has preference, however, for the face, ears, neck, back, axillæ, nipples, buttocks, anus, perineum, scrotum, labia, and legs. Constitutional disturbance may be present, which may be slight or severe, its extent depending upon the nature and amount of the inflammation. The adjoining tissues may be sympathetically affected, as manifested by soreness and pain; neighboring glands may also be enlarged. Furunculi are sometimes noted

to occur as a complication with other cutaneous diseases, as, for example, eczema, when they may partake of the nature of abscesses.

Etiology.—The causes which give rise to boils are various. Frequently they are the result of a low and depraved state of the system, induced by general debility, excessive fatigue, nervous depression, improper food and exercise, irregularity of the functions of the body, and the like. Not rarely they are encountered in the course of other diseases, as in chlorosis, fevers, and similar conditions, when they may appear in numbers; also in connection with diabetes, and sometimes with uræmia and septic pyæmia. Their appearance is to be viewed as being dependent upon a disordered state of the system. They may occur at any time of life, but are more common in youth and old age. In some cases the causes are local, depending upon friction, contusions, or other injuries; but, as a rule, they result from such causes only in those cases where there is a predisposition to their development.

Pathology.—The furuncle has its seat in the corium and deeper tissues. According to Kochmann,* it may begin in a sebaceous gland lying in the corium near the surface, or may originate in a sweat gland or hair-follicle lying deeper, even in the subcutaneous connective tissue. The latter variety is the connective-tissue furuncle, formerly so called. It always has a gland as a centre of origin, and never begins in the meshes of the corium. Beginning in a sweat gland, as usually encountered in the axillæ, around the nipples, and about the anus or perineum, it has been described at length by Verneuil† and Bazin,‡ with the name “hydroadenitis,” but it differs from the commoner form merely in being deeper-seated. The boil is an inflammation of a peculiar type, running a more or less definite course. It begins as a small roundish spot, which increases in size until certain dimensions are attained, when it undergoes suppurative change, resulting in the formation of a central point, or core, composed of the tissue of the gland in which the furuncle originated, which, together with pus, is cast

* Beitrag zur Lehre von der Furunculösen Entzündung. Archiv für Derm. und Syph., Heft 3 u. 4, 1873.

† Arch. Gén. de Méd., 1854.

‡ Affections génériques de la Peau, vol. ii. p. 319. Paris, 1865

off. It shows no disposition to become diffuse, being always a circumscribed inflammation. After the discharge of the core, a cavity of more or less depth remains, showing the tissues around it to be hard and infiltrated; after a few days or a week it fills up by granulation, leaving a cicatrix, which is often permanent. The central point or core, when thrown off, is composed of a whitish, tough, pulsatous mass of dead tissue, varying in size with the extent and depth of the inflammation.

Diagnosis.—The symptoms of furuncle are so well known that error in diagnosis can scarcely occur. The affection differs from anthrax, in that it possesses only one point of suppuration, the core, whereas in the latter disease this feature is multiple. The furuncle is, moreover, rounded in form, and somewhat acuminate in shape; the carbuncle may be rounded or ovalish in outline, but is flat. Furuncle is small, being seldom larger than a walnut; carbuncle varies in size from a large coin to five or ten inches in diameter. Furuncle is exquisitely sensitive and painful to the touch; carbuncle is not particularly sensitive to the touch, the pain being of a spontaneous nature. Furuncles generally occur in numbers, either at the same time or in the form of successive crops; carbuncle is almost invariably single.

Treatment.—Constitutional and local treatment are both called for, especially the former, the object being to prevent the formation of new lesions and at the same time to care for those which exist. Each case demands special study, with the view of ascertaining the cause of the affection. The functions, if disordered, are to be regulated by appropriate means. Tonics may in almost all instances be directed with good result. The saline aperients mentioned in connection with aene may often be prescribed with advantage, alone or in connection with other treatment. Arsenic, iron, quinine, and the mineral acids are all useful remedies. Arsenic, in from two to four minim doses three times daily, will be found serviceable in many cases. The sulphite and hyposulphite of sodium, in fifteen or thirty grain doses, every two or three hours, are valuable remedies, to which many cases will yield. The sulphides, especially the sulphide of calcium, in doses of an eighth of a grain or a quarter of a grain every two hours, recommended by Ringer, will likewise be found valuable. In some cases liquor potassæ, in ten to twenty minim doses, with a bitter

infusion, as quassia or cinchona, may be prescribed with benefit. Fresh yeast, in tablespoonful doses three or four times daily, is also said to be efficacious. Piffard speaks well of the syrup of the hypophosphites of lime, iron, soda, and potassa; while Hardy states that he has obtained good results from tar-water, taken to the extent of a quart in the twenty-four hours. The preparations of phosphorus are also recommended. The diet should be generous, embracing the most nutritious articles of food. In broken-down subjects the judicious use of red wine and malt liquors will prove beneficial. Hygienic measures also play an important part in the treatment. Change of air is desirable, and is sometimes followed at once by manifest benefit.

In the first stage of the disease the lesion may sometimes be aborted by the use of caustics applied to the forming core, for which purpose carbolic acid, nitrate of silver stick, acid nitrate of mercury, nitric acid, or the actual cautery may be employed. Carbolic acid is the best remedy, and may be used to the apex of the boil pure, or with an equal part of glycerine. Injection of carbolic acid, two or three drops of five per cent. solution, into the apex of the boil is highly recommended by Weber-Liel and others. Later, hot poultices of flaxseed meal, applied continuously until the core has been cast off, afford the most relief. Cold-water dressings may also be employed in the first stage.

Prognosis.—Where they tend to appear in crops they are generally rebellious to treatment. When they appear in numbers, the general health of the patient is usually impaired; in such cases the treatment should be energetic, a change of air and travelling often proving of value.

Under the names of ALEPPO BOUTON, BOIL or EVIL, DELHI BOIL, and BISKRA BOUTON, certain diseases resembling one another have from time to time been described by writers. The first of these is found at Aleppo, Bagdad, and the surrounding country; the second in India; and the third in Algeria and elsewhere along the coast of Africa. They are epidemic in these countries. Much confusion has long existed as to their true nature. They have been described as being allied to furuncle, although possessing a much more chronic course. They are characterized at first by the formation of a papule or tubercle, which soon becomes a pustule, finally terminating in ulceration, followed by a cicatrix. It is

highly probable that these three diseases are identical, but modified by nationality, climate, and other causes.

For an account of the diseases, in detail, I would refer the reader to the valuable writings of Tilbury Fox and Farquhar,* and Geber,† upon the subject. The latter observer remained some time in Aleppo for the purpose of studying the disease, and arrived at the conclusion that all the cases of so-called Aleppo Bouton were modified forms of syphilis, lupus, or serofula.

ANTHRAX.

Syn., Carbunculus; Carbuncle; *Germ.*, Brandschwär.

ANTHRAX IS A FIRM, MORE OR LESS CIRCUMSCRIBED, PAINFUL, DEEP-SEATED INFLAMMATION OF THE SKIN AND SUBCUTANEOUS STRUCTURES, VARIABLE AS TO SIZE, TERMINATING IN A SLOUGH.

Symptoms.—The disease is usually ushered in with a chill, fever, and other symptoms of general disturbance. The skin becomes hot and painful, and there forms a firm, flat, more or less circumscribed inflammation, reddish or violaceous in color, extending deeply into the subcutaneous tissues. It is painful, and is generally accompanied with a burning sensation. Within a fortnight it will usually have arrived at its height, and then consists of a deep-seated, circumscribed, brawny inflammation of a dark-red or violaceous color. The tissues now begin to soften, and the skin becomes gangrenous, breaking down at numerous points, forming perforations, through which centres of suppuration may be noticed, either as whitish fibrous plugs, or as cavities, from which a yellowish, sanious fluid oozes. The surface has a cribriform appearance, being perforated like a sieve. The whole mass of tissue results in a slough, which comes away as soon as detached, this process taking place either at once or by degrees, pieces being cast off from day to day. A large, open, deep ulcer, with firm or hard, everted edges and uneven base, results, which granulates slowly, leaving a more or less pigmented, permanent cicatrix.

* Loc. cit., p. 241. Also "On Certain Endemic Skin and other Diseases of India and Hot Climates generally," by Tilbury Fox, M.D., and T. Farquhar, M.D. London, 1876.

† Viertelj. für Derm. und Syph., Viertes Heft, 1874.

The course of the disease varies according to the age of the patient, vitality of the part, recuperative power, and other circumstances. Its duration will depend upon the size; when large it may last from four to six weeks. It is usually single. Its favorite seats are upon the back of the neck, shoulders, back, and buttocks. It is a serious disease, and when extensive, especially in the elderly, may terminate fatally. Boils are liable to appear about the borders of carbuncle, either singly or in groups. It sometimes occurs with diabetes.

Etiology.—The causes are not well understood. They are doubtless of a nature similar to those which give rise to furuncle. The disease is generally noted to occur in those who are broken down in general health, whatever be the cause of this condition. It attacks the abstemious as well as the intemperate. It is usually encountered in middle and old age, and is more often observed in men than in women.

Pathology.—The pathological anatomy of carbuncle is similar to that of the more deeply seated variety of furuncle. The disease has been aptly likened to a group of furuncles; but, as a process, it is much more destructive than the boil. Death of tissue is limited to one point in furuncle, while in anthrax it is diffuse. Beginning in a number of centres formed by the sebaceous and sweat glands of the locality, numerous points being simultaneously attacked, the inflammation extends downwards towards the looser meshes of the connective tissue, and then in a horizontal direction, involving the intervening tissues in the destructive process, the whole surface invaded terminating in gangrene and a slough. Warren,* in a study of the pathology of the disease, has shown that the pus ascends by way of the columnæ adiposæ to the hair-follicles, by the side of which it finally "points." The process frequently extends down to the fasciæ and muscles.

Diagnosis.—The disease will be readily distinguished from furuncle by its size, flatness, course, multiple points of suppuration, and the character of the slough. It may be mistaken in its early stage for erysipelas; later, however, this error would be dissipated by its circumscribed character, hardness, and pain.

Treatment.—The treatment should be both constitutional and

* Bost. Med. and Surg. Jour., April 17, 1877.

local, the former of which should be conducted upon general principles. Supporting measures are demanded in the majority of cases, when the most nourishing diet, together with milk, eggs, and whiskey or red wine, is to be freely administered. Tincture of the chloride of iron and quinine are the two remedies from which most benefit is to be looked for. The latter should be given in full doses, from ten to twenty-five grains for each dose, at intervals of twelve or twenty-four hours. Ringer speaks highly of the sulphides, as in the case of furuncle. The sulphite or hyposulphite of sodium may also be used. Anodynes, especially opium, are useful for the purpose of insuring rest at night. All measures calculated to improve the general condition should be instituted.

Local treatment may be referred to. When the carbuncle is hard and painful, crucial incisions will at times afford relief. The majority of cases, however, do equally well or better without cutting.* The wound may be dressed with carbolized oil in the strength of one to five or ten. Hypodermic injections of carbolic acid may also be practised, as in furuncle, the solution being of five or ten per cent. strength. Agnew speaks well of painting cantharidal collodion around the carbuncle, in the form of a broad zone, the effect of the blister being to relieve the tension. A similar method of treatment consists in painting the lesion repeatedly with tincture of iodine. Ether spray is well spoken of by Zimmerlin.† Carbolic acid and glycerine, equal parts, may also be applied. Various dressings have been recommended. Hebra speaks in favor of cold applications (cloths wrung out in ice-water or ice-bags) in the early stage, stating that more relief is to be obtained from this source than from poultices. Warm fomentations are, however, to be employed as soon as suppuration has begun; they tend to relieve the tension of the tissues, and hasten the discharge of the slough. The poultices may be made of flax-seed meal, and should be changed frequently. The parts should be kept scrupulously clean, the discharge being removed as soon as it makes its appearance on the surface. The slough should be

* In corroboration of this view, see a clinical lecture on the treatment of carbuncle, by Paget, *Clinical Lectures and Essays*, London, 1875; also Agnew, *Principles and Practice of Surgery*, Phila., 1881.

† Schmidt's *Jahrbuch*, No. 1, 1881.

carefully picked out with the forceps as soon as detached. For the purpose of removing the pus and the slough dry cupping may be practised, as recommended by Leitner.* The operation may be repeated several times, and is said to afford much relief. The ulcer should be washed with carbolic acid, one part to eight or twelve parts of water. The ulcer which remains is to be treated in the manner of a simple ulcer.

Prognosis.—This should be guardedly expressed. In the early stage of the disease it is impossible to state to what extent the carbuncle will spread; it may be two or three or six inches ~~in~~ diameter. A fatal termination is liable to take place, especially in elderly people who are broken down in health; but the mortality is not so great as is commonly supposed.

In connection with the subject of phlegmonous inflammations are to be mentioned several diseases affecting the skin and deeper tissues, which are produced through infection with animal poisons.†

POISONED WOUNDS.—Wounds of this character are produced by numerous insects as well as by animals. The symptoms may be local or constitutional, but are commonly the former. A number of small insects, as certain kinds of midges and flies, the mosquito,‡ flea, and bed-bug, cause lesions upon the skin, which vary in kind and degree according to the susceptibility of the individual. The bites of these insects at times give rise to appearances resembling urticaria and purpura. Bees and wasps not infrequently occasion considerable untimely disturbance by their stings, and in rare cases constitutional disorder or even death. The bites of many insects and spiders, as, for example, the scorpion, and reptiles, met with in hot climates, are extremely poisonous, and cause various lesions of a more or less inflammatory character.

The treatment of bites of venomous snakes consists in stimulating freely with alcohol, usually in the form of whiskey, and in

* Trans. Med. Assoc. of Georgia, 1877.

† For a more complete description of these diseases the reader is referred to Agnew's Principles and Practice of Surgery, vol. i., Phila., 1878, and to Gross's System of Surgery, Phila., 1872.

‡ See a paper "On the protection acquired by the human skin and other tissues against the action of certain animal poisons after repeated inoculations," by Dr. J. C. White, Bost. Med. and Surg. Jour., Nov. 9, 1871.

the use of carbonate of ammonia by the mouth or by hypodermic injection. Employed by the latter method, fifteen or thirty minims of a solution containing a drachm to the ounce of water may be administered repeatedly. Lacerda, of Brazil, recommends hypodermic injections of a solution of permanganate of potash, using a fluidrachm of a one per cent. solution, which he states is usually effective within five minutes. Stings of insects are best treated with ammonia and lime, a few grains of quick-lime dissolved in water being a remedy always at hand. Dilute carbolic acid, sugar of lead solution, spirit of camphor, salt and water, and wet clay, are also remedies of more or less virtue to which reference may be made.

DISSECTION WOUNDS.—The symptoms resulting from inoculation through contact with dead bodies are various; they may be local, confined to the point of inoculation, or they may be general, producing severe constitutional disturbance. Usually the disease is at the seat of a former abrasion of the skin, as, for example, upon the hand, which commences by the formation of a small vesicle or pustule upon a hard, inflammatory base, or as a patch of infiltration of a reddish or violaceous color. There is at first more or less burning or itching, which may be followed by pain, usually extending up the arm to the axilla, lymphangitis, and constitutional symptoms. The wound as soon as detected should be thoroughly washed or sucked and soaked in a solution of chloride of zinc or burned with this caustic.

In other cases the disease is strictly local, the lesion being considerably indurated, circumscribed, and sometimes painful. The epidermis may become thick and fissured, the sore secreting a thin or thick fluid, resulting in a crust. In other cases the disease begins in the form of a papule or tubercle, which may be followed by a more or less desquamative papillary growth, the lesion assuming an indolent tubercular or warty character. Wilks* describes this lesion with the name "*verruca necrogenica*;" it is also known as "dissection," "anatomical," and "post-mortem" tubercle. Its usual seat is about the fingers and joints. The process, whether in the form of a patch of diffused or circumscribed infiltration, or as a tubercle, assumes usually a chronic course, and is

* Guy's Hospital Reports, 3d Ser., vol. viii.

generally rebellious to treatment. Stimulating ointments, as the mercurials, especially the oleate of mercury ten or twenty per cent. strength, nitrate of silver, caustic potash, and acetic acid, will be found the most efficacious remedies.

PUSTULA MALIGNA.—Malignant pustule, called by the French “charbon,” presents features similar to those seen in dissection wounds of a malignant type. The disease is due to the inoculation of a peculiar, virulent poison generated in cattle suffering from a disorder known by the name of murrain, or charbon. After inoculation, which usually occurs about the hands of those who have to deal with cattle and hides, the period of incubation is very brief, often only a few hours, when the part is attacked with pain, burning, and itching, followed by the formation of a vesicle or pustule, with an extensive, hard areola; the pustule increases to the size of a coin, and soon breaks into an unhealthy discharging ulcer. The constitutional symptoms are usually severe, the patient not infrequently succumbing.

EQUINIA, called also **GLANDERS** and **FARCY**, may be defined as a malignant, contagious disease, derived from the horse, manifesting itself by grave constitutional symptoms, inflammation of the nasal and respiratory passages, and a deep-seated, pustular, hemorrhagic, ulcerative form of eruption. After inoculation has occurred, there is a period of incubation, varying from a few days to a week, when marked symptoms of general disturbance, prostration, and rheumatic pains manifest themselves, followed by a peculiar eruption composed of pustules, similar in form to those of variola or vaccinia, containing a thick, yellowish product mingled with blood. At times the eruption is of a tubercular or vegetating nature (“farcy buds”); these rapidly disintegrate and result in extensive ulcers, accompanied by hemorrhage and gangrene. The lymphatics become inflamed, erysipelatous patches and bullæ form here and there, which break down into suppurating and bleeding ulcers. Hard and painful tumors, of various sizes, also appear, which rapidly soften into deep abscesses. The skin over the whole body becomes cedematous, swollen, and ecchymotic. The nasal passages and the respiratory tract are affected in a most virulent manner. A thick, yellowish, bloody secretion flows from the nostrils; the mouth and throat become inflamed in patches; the glands enlarge; ulceration and gangrene of the

mucous surfaces take place as upon the skin, and the patient succumbs. It is said that the two sets of symptoms, those of the mucous membrane and those of the skin, may or may not occur in the same subject. The disease always originates in the horse. It is highly contagious, and may be contracted either by means of direct contact or through the medium of the air. The disease is rare. There is no specific treatment.

DERMATITIS.

Under this term, signifying simply inflammation of the skin, without reference to its cause or clinical features, I have grouped a number of inflammatory conditions similar as to their pathological anatomy, produced for the most part by external agencies, as, for example, heat, cold, cutaneous irritants, caustics, etc. Affections of this character are of every-day occurrence, and, as they happen to be superficial or deep-seated, fall into the domain of surgery proper or of dermatology. The lesions met with vary according to the nature of the cause, the intensity of its action, the susceptibility of the skin of the individual, and other circumstances. In the first stage there exists erythema of various grades, which may remain as erythema or may pass into other pathological conditions, as vesicles, pustules, blebs, or gangrene. The usual clinical signs of inflammation—redness, heat, swelling, pain, or itching—are all present in a more or less marked degree. The affection may be either diffused, as, for example, in dermatitis from poisons, or circumscribed, as in traumatic dermatitis. The forms most frequently encountered may be referred to under the heads of the causes which produce them.

DERMATITIS TRAUMATICA.—Here are found all those active or passive inflammatory states which exist as the result of direct violence to the skin; they include contusions, and other injuries of a similar character, as, for example, the irritation to the surface arising from ill-fitting garments, shoes, and other articles of wear. The various conditions referred to in considering the simple erythemata may, under adverse circumstances, likewise terminate in inflammation, varying as to degree. As stated in speaking of erythema simplex, the dividing line between hyperæmia and inflammation cannot be drawn sharply; the former frequently bor-

ders on the latter without the process becoming inflammation in so decided a degree as to be worthy of this name.

Excoriations constitute to the dermatologist one of the most important varieties of traumatic dermatitis. They are superficial losses of substance of the epidermis and corium, accompanied by more or less inflammation, the result usually of scratching on the part of the patient. Lesions of this kind, of a marked inflammatory character, are observed in connection with scabies, and pediculosis of the body, where the skin is lacerated extensively and the lesions followed often by considerable thickening and pigmentation.

DERMATITIS VENENATA.—Under this head are included numerous inflammatory conditions of the skin, resulting from contact with substances which act deleteriously upon this organ. The inflammation is of all grades. According to the virulence or concentration of the poison and the susceptibility of the skin, will the lesions be of an erythematous, vesicular, pustular, or bullous character. In the vegetable kingdom certain plants are known to possess properties of a poisonous or irritant nature when brought in contact with the skin; among these, *rhus venenata*, *rhus toxicodendron* (commonly known as, respectively, *poisonous sumach* or *dog-wood*, and *poison ivy* or *oak*), nettle, mezereon, and arnica* may be mentioned as being productive of most mischief. The *rhus* family exert a particularly deleterious influence upon the skin.† Contact, or, in some cases, proximity to the plants even, is sufficient to cause the affection. The poison is an exceedingly volatile acid, —toxicodendric acid,—which was discovered in the *toxicodendron* by Prof. Maisch, of this city.

All persons, however, are not equally susceptible to the influence of the acid. Some are not affected at all, being able to handle the plants with impunity; others suffer but slightly, and after contact only; while not a few are attacked by a violent inflammation of the skin, varying in degree from an erythematous condition to vesiculation, accompanied with swelling, heat, and serious disturb-

* See a paper by J. C. White on "The poisonous action of tincture of arnica upon the skin," in the Bost. Med. and Surg. Jour., Jan. 21, 1875.

† See an article "On the action of *rhus venenata* and *rhus toxicodendron* on the human skin," by J. C. White, in the New York Med. Jour., March, 1873.

ance. Individuals are met with who are so susceptible as to be affected by being in the neighborhood merely of the plants. The poison is readily conveyed by means of the hands, the parts usually first attacked, to other portions of the body, and it is in this manner that the eruption generally spreads. The face and genitalia, parts liable to be handled, are frequently the seat of the disease. The poison, as a rule, acts quickly, a few hours sometimes being sufficient to cause symptoms of cutaneous derangement; in other cases several days may elapse before marked symptoms develop themselves.

The eruption may be either of an erythematous or of a vesicular character, usually the latter. In typical examples the vesicles form rapidly; are remarkable for their irregular form; vary in size from pin-points to split peas; and are seated upon an inflamed, more or less cedematous surface. The vesicles may pass into pustules, or they may become blebs. When the eruption is at its height, swelling, cedema, heat, and itching are all prominent symptoms. The hands, arms, face, and genitalia in the male are all usually involved, and are sometimes attended by much disfigurement. At times the greater part of the surface becomes the seat of disease, showing itself in the form of scattered patches; as a rule, the lesions in these cases consist of a mixture of erythema and vesicles. The disease pursues an acute course, the vesicles rupturing spontaneously or from violence, the fluid drying into yellowish crusts. The process may continue from one to six weeks, according to the severity of the attack and other circumstances, as, for example, treatment. Under proper local treatment the majority of cases recover in the course of a fortnight.

The anatomical changes which take place are in all probability identical with those which have been noted in connection with eruptions produced by croton oil. (See p. 184.) The contents of the vesicles possess an acid reaction. The process is an acute, simple inflammation of the skin, inclining to spontaneous recovery. Attacking, however, individuals who are predisposed to eczema, as must not infrequently happen considering the extent to which eczema exists in every community, the course of the eruption may become complicated and take on the characters of a more or less chronic eczema. It is under these circumstances

only, it seems to me, that true eezema may be said to follow the eruption.

The treatment should consist of soothing, mildly astringent lotions, followed in the later stages by the use of a bland ointment or a starch dusting powder. The alkalis are all useful. Bicarbonate of soda may be dusted on the parts, likewise borax. Lotions containing alkalis, as water of ammonia, and solution of chlorinated soda, will also be found of value. An excellent remedy is a saturated solution of hyposulphite of soda, the parts being continually bathed with it. Dilute lead-water is a popular and useful remedy. Black wash, employed as a lotion for a quarter of an hour at a time, every three or four hours, is a serviceable application. Vegetable astringents, as, for example, decoctions of white-oak bark, and of the black alder, are also useful. Towards the close of the process, a wash of corrosive sublimate, a grain or more to the ounce of water, may be employed, as in the case of eczema or scabies of the hands. The best remedy, however, is *grindelia robusta*, in the form of the fluid extract, which may be diluted in the strength of one fluidrachm of the extract to four or six ounces of water. Bromine is said by Brown to be a valuable remedy, in the strength of five or ten drops to the ounce of olive oil or petroleum ointment.* Sulphate of zinc and sulphate of copper, in the form of dilute lotions, are also recommended.

Of a similar nature is the inflammation of the skin produced by the poisonous aniline and coralline dyes with which undergarments are at times colored. Undershirts, drawers, and socks dyed with these substances not infrequently cause hyperæmia and inflammation of the skin, especially when worn in warm weather and before having been washed. I have met with cases in women, occurring about the feet and legs, where the dye-stuff was found to be in the lining of the shoes, the poison having penetrated through the stockings.

Arnica, as has been already stated, also acts injuriously upon the skin. The tincture of arnica, a popular though dangerous remedy for bruises and wounds, not infrequently causes symptoms resembling those produced by the rhus plants. Mustard, canthari-

* New York Med. Record, April 20, 1878.

des, savin, tartar emetic ointment, and mezereon are also capable of producing mischief upon the skin; when applied carelessly the result may be similar to that of the irritants just referred to. Croton oil, rubbed into the skin, produces a minute vesicular and pustular eruption, accompanied by œdema, swelling, pain, and itching, its severity varying with the amount of oil and friction used. Mercurial ointment, employed injudiciously in the form of inunctions, also occasions at times an eruption similar to that of croton oil; this happens, however, only where the skin is extremely susceptible or where the substance is applied indiscreetly. The deleterious effects following the application of strong acids, as nitric and sulphuric acids, or alkalies and other caustics, are so well known as not to require more than mention. Not merely inflammation, vesicles, and bullæ, but even gangrene of the skin, may take place from the use of such preparations. The various irritants which have been enumerated are sometimes employed, especially by hysterical women, for the purpose of simulating disease, as, for example, nitric acid and cantharides for pemphigus, mustard plasters and turpentine for erythema, etc.*

DERMATITIS CALORICA.—Both heat and cold call forth inflammatory symptoms, in the form of burns and frost-bites. Burns, whether resulting from artificial heat or from the rays of the sun, give rise to the same group of symptoms as those produced by the causes already referred to. According to the extent of the burn will the skin present an erythematous, vesicular, bullous, or gangrenous condition. Similar lesions, although usually of a much less marked character, are observed in connection with frost-bite.

DERMATITIS GANGRÆNOSA.—Gangrenous disease of the skin may arise from varied causes, for the most part obscure, and may be either idiopathic or symptomatic. It may occur in the form of circumscribed or diffused patches. The idiopathic form shows a tendency to symmetrical manifestation. It is described as beginning usually in the form of small or large, circular, erythematous reddish or purplish spots, which may be tender and painful or

* In this connection see an interesting paper by the late Mr. Startin, on Feigned Diseases of the Skin, in *Brit. Med. Jour.*, Jan. 8, 1870; also an article on the same subject by Dr. Fagge, in *Brit. Med. Jour.*, Feb. 12 and March 26, 1870.

without sensation. After undergoing a more or less variable course they become gangrenous and slough, the process terminating fatally or in recovery, the latter event taking place sometimes even in the gravest cases. The disease of the skin is usually preceded by malaise, feverishness, and debility. Dr. Fagge* describes a case of circumscribed symmetrical gangrene occurring in a man fifty years of age, attacking the lower extremities, in which the cutaneous tissues were purplish, in the centre of which surfaces there were irregularly-shaped greenish-yellow patches surrounded by reddish borders. Somewhat similar cases are recorded by Brodie† with the name "a peculiar species of dry gangrene of the skin," and by Stoekwell.‡ Rooke§ reports a remarkable case in an unmarried lady, thirty-nine years of age. After several days of feverish disturbance, a red patch an inch and a half in diameter appeared in the sulcus between the left mamma and the ribs, accompanied with a slight pricking sensation, and looking as if the skin were irritated by perspiration. A few days later, a red patch overspread the third part of the mamma; on the following day a white patch the size of a quarter dollar, flat, smooth, and painless, was observed in the centre of the redness, and the next day this patch had increased to the size of half an orange. The appearance of the skin was that of tallow or white wax, and the tissues were insensible. During the following four months different parts of the integument became in succession gangrenous, thirty-six patches being recorded; in some of these the affection was limited to an erythema, which subsided leaving the skin healthy. New patches were generally separated from the previous ones by healthy skin. Large tracts of skin often became gangrenous with extraordinary rapidity. There was well-marked symmetry in the disease. The patient recovered.

Dr. Petri|| describes a case in which he himself was the sufferer. He had enjoyed good health up to the date of the attack, which was preceded by malaise and symptoms of profound general dis-

* Guy's Hospital Reports, vol. xiii., 3d Ser., 1868.

† The Works of Sir Benjamin Brodie, 1865, vol. iii. p. 392.

‡ Brit. Med. Jour., Feb. 12, 1870.

§ Lancet, 1864, vol. ii. p. 486.

|| Berlin. Klin. Wochenschr., 1879, p. 509. Abstract in Phila. Med. Times, Jan. 3, 1880.

turbance, with high temperature. The eruption consisted of numerous symmetrical, hemorrhagic maculæ, which at first increased but later diminished sensibility, amounting to almost complete anæsthesia. Later, large blebs appeared, sometimes clear, at other times bloody, accompanied with extreme exhaustion. At the end of six weeks superficial gangrene attacked the arms. Recovery took place in six months. In Rooke's case, local treatment, in the earliest stages, consisting of numerous small punctures with a lancet, or the application of the tincture of iodine, appeared to arrest the process.

Gangrenous patches may follow nerve lesions or may occur also in connection with grave cerebral or spinal diseases, as in the form of acute bed-sore, to which Charcot* has called attention, where the cutaneous lesions may manifest themselves in so short a period as a few days or even a few hours after the nervous symptoms have developed. Gangrene of the skin has also been observed in association with diabetes, as in the case recorded by Magnin.† Eichhoff‡ reports a case of multiple cutaneous gangrene due to cachexia, occurring in a child, the pathogenesis of the disease resembling the ordinary bed-sore. Leloir and Dejerine§ report a case due to trophic disturbance, occurring in a young girl of nervous temperament. It consisted of patches of superficial gangrene on the cheeks, followed by linear sears and "keloid." During three years similar patches occurred on the trunk and arms. They began by a pricking sensation, slight redness, and a diminution of sensibility; within nine hours whitish patches formed, followed by sphacelation, ulceration, and scarring. New patches appeared every fifteen days. In all cases of gangrene of the skin, and in similar forms of inflammations, care should be exercised in excluding artificial disease, or that produced by the application of irritants and caustics, with a view to deception, such as is described by Tilbury Fox || under the name of feigned erythema gangrænosum.

DERMATITIS MEDICAMENTOSA.—The occurrence of affections

* Diseases of the Nervous System, New Syd. Soc. Trans., London, 1877.

† Abstract in Lond. Med. Rec., March 15, 1879.

‡ Abstract in Phila. Med. Times, March 26, 1881.

§ Le Prog. Méd., 1881, p. 385.

|| Lancet, Oct. 30, 1875.

of the skin as a result of the ingestion of medicines is comparatively rare, although such affections may be excited by a variety of drugs under certain circumstances, chiefly of idiosyncrasy on the part of the individual. The following are among the commoner drugs which occasionally produce eruptions of different kinds. For the sake of convenience I shall refer to them alphabetically.*

ARSENIC.—Arsenical eruptions have been studied by Imbert-Gourbeyre,† Hilton Fagge,‡ and others. The eruption, according to these writers, is sometimes papular, resembling erythema multiforme, measles, or the syphilodermata of the face; in other cases it is urticarial. The lesions generally occur upon the face and neck; less frequently upon the hands and elsewhere. When papular, they last usually from five to ten days. Occasionally an erysipelatous rash occurs on the face, and more rarely a pustular or bullous eczema-form eruption. A purpuric eruption has also been described.§ The pustular, ulcerative, and gangrenous conditions caused by arsenic are usually due to the external effect of this substance, as in laborers in arsenic works and in dyeing establishments.

BELLADONNA, ATROPIA.—The eruption produced by the ingestion or absorption through the skin of the preparations of belladonna and its alkaloid is striking, and is among the best known of the medicinal rashes. The efflorescence is peculiarly liable to occur in children, although it is also of not infrequent occurrence among adults. It may show itself within a few minutes or hours after the ingestion of the medicine, even in the smallest doses, and may disappear as rapidly or gradually. It usually manifests itself upon the face, neck, and chest; less frequently over the whole surface. In form it consists of erythematous patches, or of a bright scarlatinoid rash, accompanied by dryness of the throat, and headache. There is usually no fever, nor does it give rise to itching or desquamation. Cases have been reported by Lusana,||

* The author is indebted to his friend Dr. Van Harlingen for valuable assistance in the preparation of this article. For further information on the subject the reader is referred to an exhaustive paper by Dr. Van Harlingen in the Archives of Dermatology, Oct. 1880.

† Histoire des éruptions arsénicales, Moniteur des Hôpitaux, 1857, p. 3017

‡ Med. Times and Gaz., Feb. 29, 1868.

§ Imbert-Gourbeyre, loc. cit.

|| L'Union Méd., 1854, p. 757.

Jolly,* Berenguier,† and Dreyfous.‡ J. G. Wilson§ reports a case where the characteristic eruption was brought out by the inunction of the breast with extract of belladonna. It may be mistaken for scarlatina.

BROMINE, BROMIDES.—The eruption due to the bromide of potassium ordinarily assumes the form of scattered acne-form pustules or furunculoid lesions, first appearing upon the face, chest, and back, occasionally making their appearance within twenty-four hours after the medicine has begun to be taken; more usually it does not appear until after it has been continued from three to seven days. Occasionally, according to Echeverria,|| there appears a brownish discoloration, conspicuous on the forehead or neck; also diffuse elevations of the skin. Papular lesions may appear about the elbows, on the backs of the hands, and on the knees and legs. Echeverria, moreover, states that he has seen painful subcutaneous suppuration, and in one case ulceration over the posterior surface of the forearm. Neumann¶ has observed lesions like “molluscoid acne,” coming on in successive outbreaks; also a carbuncular form of disease, with considerable loss of substance in the centre. Dr. Cholmeley** describes a case of what he calls “confluent acne,” due to the bromide, which resembled in some respects that of Neumann, but was more severe. As regards the general features of the eruption, this case was closely allied to my case due to the iodide cited below. Similar cases have been reported and figured by Lees†† and Crocker.‡‡ I have published§§ the notes of a case in which the eruption simulated very closely the maculo-papular syphiloderm. A peculiarity of this case was that the patient had been taking the bromide, in moderate doses,

* Arch. Gén., 1ère Sér., t. xviii. p. 92.

† Thèse de Paris, 1874, p. 35.

‡ La France Méd., Dec. 1877; Phila. Med. Times, March, 1878.

§ Dublin Jour. Med. Sci., Feb. 1872, p. 198.

|| Phila. Med. Times, Nov. 30, 1872.

¶ Wien. Med. Wochenschr., No. 6, 1873; Amer. Jour. of Syph. and Derm., 1873, p. 283.

** Lond. Clin. Soc. Trans., 1870, vol. iii. p. 38.

†† Lond. Path. Soc. Trans., 1877, vol. xxviii. p. 247.

‡‡ Ibid., 1878, vol. xxix. p. 252.

§§ Maculo-papular eruption due to bromide of potassium, Med. and Surg. Reporter, Nov. 30, 1878.

almost continuously for three years. The dose being suddenly decreased, within five or six days the patient was attacked with an erythematous efflorescence about the face, hands, and neck, accompanied by maculo-papules and minute pustules. At the end of three days, the medicine being continued, the eruption had extended over the entire surface of the body and the limbs. The bromide was then stopped. When seen by me two days later, the patient's face had a congested violaceous hue; was hot, flushed easily, and was the seat of partly confluent maculo-papules, with enlarged sebaceous gland ducts, and here and there covered with thin sebaceous crusts. Pea-sized, flat sebaceous crusts were scattered about the scalp. The eruption pervaded the entire surface of the body and the limbs. About the neck it was of a light violaceous hue, while over the body it had a yellowish, tawny color. Slight burning sensations were experienced. The eruption passed away spontaneously within a fortnight after cessation of the bromide. Dr. Seguin, of New York,* describes a similar case, where the disease, situated upon the face and neck, showed papules, pustules, and numerous purple, slightly-raised nodules, the size of split peas or finger-nails. The same observer states that he has also seen several cases of a "rupia-like eruption" in epileptics saturated with the bromide of potassium. Voisin† reports "eczema madidans" and severe "pityriasis" of the scalp lasting some months after the cessation of the medicine as due to the bromide of potassium. Wigglesworth‡ describes a bullous eruption. § The bromide eruptions, according to both Voisin|| and Veiel,¶ are more frequent among persons with thick, greasy skins, especially women. Their appearance may be hindered or mitigated by the simultaneous administration of arsenic, as was originally noted by Echeverria. Gowers** has also written on the value of this remedy as a preventive. As

* In a letter to the author.

† Eruptions cutanées par l'usage interne de bromure de potassium, *Gaz. Méd. des Hôp.*, 1868, p. 603.

‡ Proceedings of the American Dermatological Association, *Arch. of Derm.*, vol. v. No. 4, Oct. 1, 1879, p. 371.

§ Guttman, *Virchow's Archiv*, 1878, Bd. lxxiv. p. 541.

|| Loc. cit.

¶ Ueber Bromkalium-Aene, *Viertelj. für Derm. und Syph.*, 1874, p. 25.

** *Lancet*, 1878, p. 866.

a local dressing, where pustules and ulcers exist, a saturated solution of salicylic acid will be found useful, as recommended by Prowse.* According to Ringer,† there appears to be some difference in the effects of the different bromides in producing disease of the skin, the ammonium salt being the most active in this respect, and the sodium salt the least active.

CANNABIS INDICA.—Dr. J. Nevins Hyde,‡ of Chicago, has described the case of a gentleman who, having taken a grain of the extract of cannabis indica before retiring, awoke the next morning covered over nearly the entire body with an eruption of disseminated pin-point to split-pea sized vesico-papules and vesicles. The facial lesions were rather livid. There was considerable pruritus. The disease subsided spontaneously in a few days. I have never seen this eruption, nor am I acquainted with any other recorded case.

CHLORAL.—An erythematous, scarlatina-form, or urticarial efflorescence due to the ingestion of chloral hydrate is not very rare. Its occurrence seems to be favored by the simultaneous or subsequent administration of stimulants. It is of a dusky rose color, and is accompanied by itching. According to Martinet,§ its favorite seats are the face, neck, chest, the neighborhood of the larger articulations, and the hands and feet. Kirn|| speaks of swelling and heat of the affected parts, with fever and tenderness of the skin, lasting many hours. Sometimes the lesions are papular upon the extremities. In some cases, according to Kirn, a swollen condition of the whole body is noticed; in others, glandular engorgements. Occasionally, if the medicine be persisted in, vesicles and petechiæ, with ulceration or sloughing, and even death, with symptoms of purpura hemorrhagica, may supervene.¶

* Brit. Med. Jour., 1880, vol. ii. p. 127.

† Practitioner, vol. viii., March, 1872.

‡ New York Med Record, May 11, 1878.

§ Thèse de Paris, 1879.

|| Practitioner, vol. x. p. 362.

¶ In a case occurring under Kirn's personal observation, where chloral in large doses (40 to 75 grs. every evening or twice daily) was persisted in for a month or more, papules first appeared upon the face, and became confluent. The patient's temperature rose on the twentieth day to 106° F., followed by œdema of the face; later, "moist impetiginous and scaly eczema-form eruptions" occurred, succeeded by general desquamation lasting several weeks,

Crichton Brown* also reports a case in which purpuric lesions resulted from the use of this medicine.

COPAIBA.—The copaiba rash often follows immediately upon the ingestion of the medicine, in the form of a characteristic bright cherry-red maculo-papular or papular efflorescence, resembling both urticaria and erythema multiforme. It shows itself by preference upon the hands, arms, feet, knees, and abdomen, but sometimes it appears suddenly, and may invade the entire surface. It usually lasts a few days only. Itching is generally present, sometimes to an intolerable degree. Gubler states that he has seen miliary and scarlatina-form eruptions produced by copaiba.†

CUBEBS.—Disease of the skin due to the ingestion of cubebs is rare, and only follows the use of considerable doses, and especially in young subjects. In a case noted by Berenguier,‡ cubebs had been given for ten days, when a rash broke out resembling “papular roseola,” showing a bright-red diffuse coloration of the skin, with numerous millet-seed papules coalescing here and there into finger-nail sized patches. It was confluent over the face, arms, and trunk, but was less abundant over the lower limbs. There was no fever, invasion of the throat, or pruritus. It disappeared with furfuraceous desquamation a few days after the medicine was stopped.

DIGITALIS.—According to Behrend,§ Traube in two cases observed a scarlatina-form eruption and a papular erythema after the ingestion of digitalis.

IODINE, IODIDES.—Iodide of potassium may give rise to erythematous, papular, vesicular, pustular, bullous, and purpuric lesions. The erythematous efflorescence, which, compared with some of the other forms, is not very uncommon, occurs usually upon the forearms in discrete or confluent patches, and also upon the face and neck. If the administration of the iodide is persisted

during which time whole sheaths of epidermis were cast off from all parts of the body, and the hair and nails were shed. Finally, a series of large abscesses formed over the shoulders and in the axillæ, and the patient succumbed with the symptoms of chronic blood-poisoning.

* *Lancet*, April, 1871, pp. 440, 473.

† Berenguier, loc. cit.

‡ Loc. cit.

§ *Die Hautkrankheiten*, p. 152. Braunschweig, 1879.

in, this may go on to the papular form, which is rarer. The vesicular or eczema-form variety has been described as occurring in patients long under treatment. By some writers it has been said to be most common on the scalp and scrotum. Others describe its occurrence on the chest or limbs, and as accompanied by severe itching and desquamation. Mercier, quoted by Bumstead and Taylor,* describes a case where moderate doses of the iodide brought out on two occasions in the same person an eruption like eczema rubrum over the whole body, accompanied by fever, with some dyspnoea, and so copious an exudation of fluid that the bed on which the patient lay was completely wet through.

The pustular eruption bears a close resemblance to that produced by bromide of potassium. Ordinarily it is acne-form in appearance, and commonly occurs upon the face, shoulders, back, chest, and arms. Sometimes the pustules are followed by indurations, which may persist. I recently described, under the title of "circumscribed phlegmonous dermatitis due to iodide of potassium,"† a singular case, where, after taking the iodide of potassium in moderate doses for some weeks, a slightly inflammatory annular patch appeared on the forehead of the patient half an inch in diameter, consisting of a number of pin-head sized vesico-pustular lesions, looking like an irritated patch of ringworm. This extended rapidly, and several similar lesions appeared elsewhere upon the face. At the end of a fortnight the original lesion was nearly two inches in diameter, consisting of a circumscribed and defined, irregularly rounded, elevated, firm, inflammatory, violaceous patch. Its centre was depressed and crusted, the inflammation here having subsided. Scattered over the patch, especially about the periphery, were sebaceous pustular lesions, evincing no disposition to rupture. When pricked or cut into, the yellowish pustular points bled, but did not exude their contents. This case resembled very closely the similar eruption described by Cholmeley as due to bromide of potassium. Adamkiewicz‡ has found iodine in the pustules of the iodide eruption.

The bullous eruption due to iodide of potassium was first de-

* Venereal Diseases, 4th ed., New York, 1879, p. 815.

† Med. and Surg. Reporter, Dec. 13, 1879, p. 516.

‡ Charité Annalen, 1878, vol. iii. p. 381.

scribed by O'Reilly;* cases have since been reported by Bumstead,† Tilbury Fox,‡ R. W. Taylor,§ J. Nevins Hyde,|| myself,¶ and others. Dr. Hyde's paper contains an analysis and summary of the symptoms presented by this eruption in fourteen recorded cases, from which it appears that it occurs most frequently about the head, neck, and upper extremities, less frequently upon the lower limbs, and rarely upon the trunk. In one instance it occurred within the mouth. The eruption begins as pin-point sized vesicles or as shot-like papules, at the apices of which vesiculation appears, the vesicles being of a pale, yellowish-white color. In some cases the disease does not go beyond this point, but if the iodide be given in large doses or continued the blebs become dark red or purplish. In these cases the fluid, at first clear serum, becomes puriform and sanguinolent. In a few cases blood only was found in the blebs at an early age. When the iodide is discontinued the lesions usually disappear within a few days or a week.

Purpura induced by iodide of potassium is among the rarer forms of disease caused by this medicine. It has been ably described by Fournier.** It commonly appears soon after the beginning of a course of the medicine, and is most apt to occur upon the legs, less frequently upon the neck, face, and other parts of the body. Fournier describes a miliary form of which he has met fifteen cases, all but one having been confined to the legs. Sometimes the eruption occurs in larger patches, and it may even take on the form of purpura hemorrhagica and assume a grave character. Mackenzie†† reports the case of an infant who suffered from fatal hemorrhagic purpura following the administration of two and a half grains of the iodide of potassium. Duffey‡‡ has also written on iodide purpura.

* New York Med. Gaz., Jan. 1854.

† Amer. Jour. of the Med. Sci., July, 1871, p. 99.

‡ Clin. Soc. Trans., vol. xi., 1877.

§ Arch. of Derm., April, 1877, p. 227.

|| Ibid., October, 1879, p. 333.

¶ Med. and Surg. Reporter, Aug. 4, 1877, p. 89.

** Rev. Mens. de Méd. et de Chir., Sept. 1877.

†† Med. Times and Gaz., Feb. and May, 1879, pp. 280 and 507.

‡‡ Dublin Jour. of Med. Sci., April, 1880.

MERCURY.—In connection with the subject of “mercurialism,” cases of eruption due to mercury were formerly not infrequently reported, but of late years a certain amount of scepticism has prevailed as to the power of mercury, internally administered, to excite eruptions. Hebra* declares very positively that diseased conditions of the general cutaneous surface are never excited by the internal administration of any of the preparations of mercury; and my own experience would favor the same conclusion. But recently a number of undoubted cases have been recorded by Fournier and Hallopeau,† Engelmann,‡ and others, in which a partial or entire erythematous efflorescence has been aroused by the ingestion of small doses of mercury. The skin became smooth, shining, dry, and itchy, and a diffuse deep-red eruption, with swelling, resembling erysipelas, began in the face. Other parts of the body were gradually invaded.

OPIUM, MORPHIA.—The efflorescence caused by opium and its preparations is usually of an erythematous character, often closely resembling that of scarlet fever. Behrend§ has recorded the case of a man who, after taking one-fourth of a grain of opium every hour (amounting to two grains and a half in the course of the day), was attacked by violent itching, with a punctiform scarlet rash, chiefly over the chest, inner and flexor sides of the forearms and wrists, and inner and flexor sides of the lower limbs and ankles. It lasted between one and two weeks, and desquamated in large flakes, especially over the backs and palms of the hands and over the soles of the feet. Seguin|| gives a case of dermatitis produced by three preparations of opium in the same subject. Berenguier¶ alludes to profuse sweats, and sometimes sudamina, as following its administration. The milder forms of eruption disappear in a few hours, and leave no desquamation, while the more marked forms last longer, and are sometimes accompanied by complete desquamation of the affected parts. Apolant** gave a patient a

* Hebra u. Kaposi, *Lehrbuch der Hautkrankheiten*, 2 Aufl., 1872, Bd. i. p. 452, Erlangen.

† Du Mereure, Paris, 1878, p. 110. (Quoted from Behrend.)

‡ Berlin. Klin. Wochenschr., Oct. 27, 1879.

§ Ibid., Oct. 20, 1879, p. 626.

|| Arch. of Med., No. 1, Feb. 1, 1879.

¶ Loc. cit.

** Berlin. Klin. Wochenschr., No. 25, 1878, p. 361.

few drops of a solution containing a grain and a half of morphia in two and a half drachms of water. Within a short time a marked efflorescence appeared, with heat and itching; the face was œdematous, and wheals occurred on the buttocks and hands. Lamellar desquamation followed in five days.

PHOSPHORIC ACID.—Hasse* records the occurrence of a bullous disease, which he regarded as pemphigus, in the case of a young girl who had been taking phosphoric acid, which disappeared when the medicine was suspended, but returned when it was given once more.

QUININE.—The efflorescence due to this drug is usually erythematous, and may be brought out by even very small doses. It is ordinarily preceded by a chill, nausea, vomiting, headache, and fever. A little later, in most cases, erythema appears, accompanied by œdema, injection of the conjunctivæ, and redness and dryness of the pharynx and nasal passages. The cutaneous manifestation shows itself first upon the face and neck, and spreads over the body in patches of various size, which may become confluent, the eruption then becoming general. It is accompanied by a decided burning and itching. In some cases the eruption resembles scarlatina very closely. Desquamation, sometimes lasting weeks, may follow. In other cases the eruption resembles measles.† Occasionally it assumes the papular form, resembling erythema multiforme papulosum,‡ and urticaria.§ Köbner|| reports a case where quinine always produced an erysipelas of the scrotum, and Morrow¶ refers to Panas, who asserts that large doses have given rise to a bullous eruption. The efflorescence is said to occur more frequently among women. Bergeron and Proust** have also noted a disease occurring among workmen in quinine-factories. In these cases the lesions are said to have been eczema-form in character, and were brought on by the local action of the drug (or by the materials used in its manufacture) upon the skin rather than by

* Zeitschr. für Natur- u. Heilk., Dresden, 1820, i., 3 Stück, p. 362.

† Köbner, Berlin. Klin. Wochenschr., May 28, 1877.

‡ Heusinger, Berlin. Klin. Wochenschr., June 18, 1877.

§ Dumas, Jour. de Thérap., 1876, p. 288; also Morrow, New York Med. Jour., March, 1880, with a biography.

|| Loc. cit.

¶ Loc. cit.

** Annales d'Hygiène, July, 1876.

the absorption of the quinia into the system. A purpuric form of eruption has also been noted, five cases of which, according to Morrow, have been reported. In one of these,* two grain doses continued for four days were sufficient to bring out the disease, together with hemorrhage from the gums.

SALICYLIC ACID.—The cutaneous lesions attributable to salicylic acid are of several different kinds. Heinlein† observed a case in which salicylate of sodium was given in seven grain doses hourly for ten days, and then increased to sixty grain doses. Soon after the first sixty grain dose had been taken, intense itching and tingling of the skin set in, followed by fever and a diffuse erythematous efflorescence on the left side of the face and chest and on the lower extremities, together with some œdema of the eyelids, upper lip, and lower limbs. The medicine being decreased, the eruption disappeared, but on taking a sixty grain dose of the salicylate again, an urticarial eruption showed itself within half an hour on the greater part of the body, with œdema of the eyelids and arms. This moderated in a few hours and disappeared the next day. Small doses did not seem to excite the eruption. Fren- denberg‡ describes a case where, after taking salicylic acid, the patient's back was covered with ecchymotic patches, which extended to the sides and chest. The acid was discontinued, and by the sixth day the eruption had disappeared. The patient was anæmic. Wheeler§ observed vesicles and pustules on the hands and feet, with much sweating, which disappeared upon stopping the administration of the medicine.

SANTONINE.—Sieveking|| reports a case where three grains of santonine were given to a child, who soon after showed an urticarial efflorescence over the face and body. The face was swollen, and there was œdema of the eyelids. The child was put in a bath, and the rash and œdema disappeared within an hour or so.

STRAMONIUM.—Deschamps¶ states that he has observed an erythematous eruption after the use of *datura stramonium*.

* Gauchet, Bull. Gén. de Thérap., t. lxxix. p. 373.

† Rundschau, 1878, xix., 10 Heft.

‡ Berl. Klin. Wochenschr., No. 42, 1878.

§ Bost. Med. and Surg. Jour., Oct. 17, 1878.

|| Brit. Med. Jour., Feb. 18, 1871.

¶ Gaz. des Hôp., 1878, No. 124.

STRYCHNIA.—Skinner* reports a case where one-quarter of a grain of quinine, given three times a day, having given rise, even after the second dose, to a scarlatina-form rash, one twenty-fourth of a grain of strychnia was substituted, but with a precisely similar effect.

TURPENTINE.—The eruption most frequently observed as a result of the ingestion of turpentine in large doses is erythematous in character, occurring usually over the face and upper part of the trunk, in some instances accompanied by a profuse rash of minute papules. It may be diffused. It is apt to be accompanied by violent itching. Occasionally, according to Berenguier,† vesicular lesions are produced, closely resembling acute vesicular eczema.

According to Behrend,‡ who has published an interesting paper on the subject of these dermatitides, an examination of the symptoms described as aroused by drugs shows that they may be divided into two classes: 1. The pustular, embracing the iodine and bromine eruptions; 2. The various eruptions occasioned by other medicines. The first class is usually characterized by the late appearance of the disease, it being due, it would seem, to a saturation, or at least a thorough impregnation, of the organism by the drug. The rash in one form or another occurs in all who take the drug in sufficient quantity, becoming more marked as the quantity of the drug is increased, and fading away with its diminution. There are, of course, differences in the lesions due to individual idiosyncrasy. Persons with thick oily skins are more prone to this class of eruption. The fact that iodine and bromine have been detected in the pustules goes to show that they are produced by irritation during the excretion of these drugs. Against this view, however, must be mentioned the report of a microscopic examination of the lesions in Cholmeley's case, made by Dyce Duckworth, whose investigations led to the conclusion that the pustules were not of the nature of acne, but were due to superficial localized dermatitis.§

* Brit. Med. Jour., Jan. 29, 1870.

† Loc. cit.

‡ Berl. Klin. Wochenschr., 1879, Nos. 42 and 43.

§ Trans. of Lond. Path. Soc., 1879, vol. xxx. p. 476.

The second class take on the exanthematic form, often extending over large portions of the surface. They are usually acute, in many cases occurring after an initial chill, and are generally accompanied in their course with high temperature and gastric disturbance; in some cases these symptoms are wanting. They usually appear immediately or as soon as the medicine is absorbed and reaches the circulation. There are, however, exceptions to this rule, as in the case of the arsenic eruptions, where the drug is sometimes taken for some time before producing any effect upon the skin, even in individuals who are subject to such influence.

CLASS IV.

HÆMORRHAGIÆ—HEMORRHAGES.

HEMORRHAGES into the skin assume certain external appearances which are designated, according to their form and size, as petechiæ, vibices, ecchymoses, and ecchymomata. These may be defined as follows:

Petechiæ are roundish, ovalish, or irregular in form, and vary in size from a pin-point to a finger-nail. Vibices are long, narrow, streak-like lesions, varying in size from a few lines to an inch or more. Ecchymoses are large, variously sized, roundish, or irregularly-shaped, non-elevated, superficial patches. Ecchymomata consist of extensive extravasations, which appear in the form of variously sized and shaped, deep-seated, flat or raised patches or tumors.

Cutaneous hemorrhages may occur either through diapedesis or as an extravasation. They may be the result of external injury, in which case they are termed idiopathic, or they may take place as a symptom of some internal disease, when they are designated symptomatic.

IDIOPATHIC HEMORRHAGE.—To this category belong all those conditions which are produced by wounds, contusions, and other forms of direct violence to the integument, and by mechanical vascular disturbances, as in varicosities. In these cases the vessels are ruptured and the blood extravasated in greater or less quantity into not only the skin but also the deeper structures. Under this head also are to be placed the minute, circumscribed hemorrhages produced by the bites of various insects, among which the pediculus, flea, and bed-bug may be mentioned as giving rise to the most mischief.

SYMPTOMATIC HEMORRHAGE.—The hemorrhage here takes place spontaneously, showing itself as apparently the only disease,

as, for example, in purpura simplex; or, as a symptom in the course of certain severe constitutional diseases, as in variola and typhus fever; or, finally, as a secondary symptom in other diseases of the skin, as in pemphigus, ecthyma, and erythema nodosum.

The general characters of cutaneous hemorrhage have been already stated in the chapter upon the pathology of the skin.

PURPURA.

Syn., Hemorrhœa Petechialis; *Germ.*, Purpura; Blutfleckenkrankheit; *Fr.*, Purpura.

PURPURA CONSISTS IN THE DEVELOPMENT OF VARIOUSLY SIZED AND SHAPED, NON-ELEVATED OR RAISED, SMOOTH, REDDISH, HEMORRHAGIC PATCHES, CHARACTERIZED BY REMAINING UNDER PRESSURE.

Symptoms.—Three varieties are met with. These differ in the premonitory symptoms which precede the cutaneous manifestation, in the amount of constitutional disturbance attending the disease, in the extent of the hemorrhage, and in the etiology. The external forms of the lesions, their size, shape, number, and color, are likewise found to be different.

PURPURA SIMPLEX.—This variety rarely exhibits symptoms of systemic disturbance. Frequently the spots are the only manifestations of disease. At times they give rise to so little inconvenience that their presence may for a time escape detection on the part of the patient. Occasionally, however, the patient complains of feeling unwell, of loss of appetite, and of fatigue on exertion, for some days before the cutaneous lesions appear. They generally make their appearance suddenly, often in the course of a night, at other times more gradually, in the form of bright-reddish, claret-colored, or purplish, sharply circumscribed, roundish, ovalish, or irregularly-shaped, hemorrhagic spots.* They vary in size from a pin-point to a pea or bean. They usually occur in numbers and symmetrically, their common seat being upon the lower extremities, the flexor surface of the thigh being the locality most frequently attacked;† other regions, however, are also involved. They exhibit a tendency to appear in a scattered manner, invading a consider-

* Rarely, they may assume a circinate or annular form, as in a case reported by me in *Med. and Surg. Reporter*, Aug. 3, 1878.

† See my *Atlas of Skin Diseases*, Plate K.

able amount of surface. They are, as a rule, unaccompanied by subjective symptoms. Sometimes, however, slight itching or pain is present. Soreness is more frequently complained of. At times, where there is a disposition in the skin to the ready development of wheals, these lesions may show themselves in connection with the hemorrhage, constituting PURPURA URTICANS, in which case the itching may be marked. In many cases the nervous system is unquestionably at fault, constituting so-called neurotic purpura. Mitchell* and Tyrrell† have both called attention to this cause of the disease. In all the cases reported by the last named observer the subjects had been exposed to marsh-miasm in malarial districts, which he regarded as the primary cause. Blebs have also been noted in association with purpura, as in the case of recurrent cutaneous hemorrhage with urticarial and bullous efflorescence reported by White.‡ It happens occasionally that the disease is produced by the internal administration of medicines, cases of which have been reported by Fournier,§ Abbe,|| T. C. Fox,¶ and Mackenzie,** from iodide of potassium; Crichton Brown,†† from chloral; Jeudi de Grissac,‡‡ from quinia; and Frendenberg,§§ from salicylic acid.

The disease is more frequently observed in the old than in the young. Its duration may vary from a fortnight to several months. The cutaneous lesions are apt to relapse, in the form of crops, throughout the course of the disease. The causes are sometimes obscure; it occurs in those who are apparently well nourished, but it is much oftener encountered in debilitated subjects. The lesions when small are liable to be confounded with flea-bites; the central hemorrhagic point in the latter, however, surrounded by more or less congestion, will usually be sufficient to differentiate them.

* Amer. Jour. of Med. Sci., July, 1869, p. 116.

† Pacific Med. and Surg. Jour., June, 1876.

‡ Bost. Med. and Surg. Jour., Oct. 10, 1878.

§ Rev. Mens., Sept. 1877.

|| Arch. of Derm., April, 1878.

¶ Brit. Med. Jour., May 31, 1879.

** Med. Times and Gaz., vol. i., 1879.

†† Lancet, vol. i., 1871.

‡‡ Des éruptions quiniques. Thèse de Paris, 1876.

§§ Berl. Klin. Wochenschr., No. 42, 1878.

PURPURA RHEUMATICA,—PELIOSIS RHEUMATICA.—This variety is ushered in with more or less fever, lassitude, loss of appetite, and marked depression of spirits, together with severe rheumatic pains throughout the body, more particularly about the joints of the lower extremities. In the course of a few days or a week, the eruption suddenly makes its appearance over a part or the whole of the body, the lesions being most distinct over the arms, thighs, and legs. They consist of more or less well defined hemorrhagic spots, pinkish, reddish, or purplish in color, varying in size from a split pea to a finger-nail. They are either slightly raised or on a level with the surrounding skin, and are unattended by subjective symptoms; a general soreness, however, is apt to be felt over the whole integument. The color of the eruption undergoes changes from time to time, passing into yellowish and greenish hues, until finally, with the absorption of the blood, it gradually fades away.

The disease may last a few weeks or months, in which case new hemorrhagic spots appear in the form of relapses. The constitutional symptoms, consisting of depression, loss of strength, weariness, and allied feelings, often remain throughout the attack, and are generally marked. The rheumatic pains which precede the hemorrhage are apt to abate materially upon the appearance of the eruption. The disease is encountered in both men and women, more often in the latter, and ordinarily occurs during middle life. In certain cases it is associated with erythema multiforme. As a rule, no causes can be assigned for the disease.* It is regarded by some observers as an affection of the vaso-motor system. In my experience the disease is uncommon.

The diagnosis is at times difficult, especially in those cases in which the lesions are imperfectly developed; the eruption may under these circumstances bear a resemblance to the macular syphiloderm.† Here the premonitory symptoms, together with the absence of itching, also point towards syphilis. Upon close inspection, however, the hemorrhagic character of the lesion may be detected. If seen before the appearance of the eruption, the disease may be mistaken for rheumatism.

* For a report of cases of this form of purpura, see an article by Dr. Kinnicutt, of New York, in *Arch. of Derm.*, vol. i. p. 193.

† See a paper by me, in *Phila. Med. Times*, 1873, vol. iii. p. 545.

PURPURA HEMORRHAGICA,—LAND SCURVY,—MORBUS MACULOSUS WERLHOFFII.—This form usually begins with premonitory symptoms of a decided character, consisting of debility, loss of appetite, languor, headache, and feelings of general distress. The spots first make their appearance upon the limbs, extending thence rapidly to the trunk and upper extremities. Their advent is generally sudden. They are usually in great numbers. In size they vary from a small coin to the palm of the hand; not infrequently two or more coalesce and form irregularly-shaped patches. A variety of sizes and shapes are usually encountered. Simultaneously with the cutaneous lesions, or later, hemorrhage from other portions of the body, particularly the mouth, gums, nostrils, bowels, and bladder, may take place. This may be either slight or violent in its character, large quantities of blood not infrequently being discharged. The constitutional symptoms of depression and debility are apt to continue as long as there is tendency to hemorrhage.

According to Rigal and Cornil,* the disease is the result of debility caused by nervous exhaustion. The hemorrhage is due to disturbance of vascular innervation, dependent either upon irritation of the sympathetic or upon diminished action of the vaso-motor centres.

The course and duration of the disease are variable; it may continue for days and weeks, in the form of relapses, or it may terminate completely within a week or a fortnight. The hemorrhage may cease suddenly or by degrees. It is encountered in both children and adults, although more frequent in the latter. It occurs in the strong and properly cared-for as well as in the weakly and improperly fed. It is a serious disease, and may end fatally.

Purpura hemorrhagica differs from scurvy, the disorder to which it bears most resemblance, in important particulars. Purpura is commonly observed in those who have not been subject to the peculiar influences which give rise to scurvy, namely, bad hygiene, improper diet, and the want of vegetable food in particular. In purpura the premonitory symptoms are not always of a distinctive character, and may at times be altogether absent; in scurvy they

* Abstract from L'Union Méd. in Phila. Med. Times, March 12, 1881.

are invariably present, and constitute a pathognomonic group, consisting of absolute weakness and general debility, impaired circulation, tumefaction of the gums with bleeding, and looseness of the teeth. Purpura is apt to announce its presence suddenly; scurvy always slowly.

Pathology.—The blood is in the majority of cases suddenly extravasated into the cutaneous tissues, and finds its way into the various layers and structures; at one time having its chief seat in the tissue of the corium itself or subcutaneous connective tissue, at another time about the glands and follicles. According to the amount of blood extravasated and the permeability of the tissues, will the spots be small or large, circumscribed or diffused, roundish or irregular in shape, and otherwise peculiar. The process, as a rule, is unattended by inflammation or by subjective symptoms; frequently it takes place unawares to the patient. It is neurotic in nature certainly in many cases. Sometimes complications arise, other forms of disease accompanying the hemorrhagic lesions, as in the case reported by White, referred to. The blood once out of the vessels acts as a foreign body in whatever part of the skin it may chance to be, and can be removed only by resorption. This process is usually a slow and gradual one, the fluid, more particularly in its coloring matter, undergoing various changes, as seen in the variety of tints, as yellow, green, blue, and purple, which the spots from time to time assume in the course of their decline. Sooner or later, in the course of weeks or months, the tissues return to their normal state.

Treatment.—The plan of treatment in purpura must be adapted to the requirements of the case. Inasmuch as the causes producing the disease often appear to be different in their nature, so will the general treatment call for more or less modification. The diet and hygiene should both receive attention. If the hemorrhage be extensive, rest in the horizontal position is of the utmost importance.

In purpura simplex, ergot, the preparations of iron, especially the tincture of the chloride, quinine, belladonna, and the mineral acids, together with frictions and cold baths, are all beneficial. Harkin* speaks highly of the value of chlorate of potassium, in

* Brit. Med. Jour., Oct. 30, 1880.

twenty grain doses, where there is a hemorrhagic diathesis. Purpura rheumatica calls for particular attention to hygiene and diet; fresh air, change of occupation, the best of food, including stimulants and malt liquors, and regulation of the important functions of the economy, are to be prescribed to suit the demands of the case.

Purpura hemorrhagica, usually an alarming and at times a serious or even fatal disorder, calls for prompt treatment. Rest in bed is to be enjoined upon the patient. Ergot, quinine, iron, and the mineral acids, as in the other varieties of purpura, are the remedies found to be of the most value. Cases are reported by Lane,* Minich,† and Armaingaud,‡ in which hypodermic injections of ergotine promptly relieved the disease. Oil of turpentine, and astringents, as the acetate of lead with opium, may also be mentioned as remedies enjoying reputation. Electricity has been used with success after the failure of other remedies, as in a case reported by Shand.§ The external treatment should consist of ablutions with astringents in solution, as alum, tannic acid, vinegar, and the like. Ice, applied frequently to the parts, is perhaps one of the best local remedies. Enemata of ice-water are also useful where there is hemorrhage from the bowels.

Prognosis.—This must vary not only with the variety of the disease, but also with the case. In purpura simplex the prognosis is always favorable as to ultimate recovery, although restoration to health may be slow. The same may be said of purpura rheumatica, although this form is apt to be stubborn, and to prolong its course indefinitely by frequent relapses. In purpura hemorrhagica the prognosis should always be extremely guarded, for the disease is serious and treacherous; it is impossible to predict what course it will pursue. Rigal and Cornil|| state that the gravity of the disease does not depend on the amount of blood extravasated.

HÆMATIDROSIS.—This disease (known also by the names hæmi-

* Brit. Med. Jour., Sept. 5, 1874.

† Phila. Med. Times, May 8, 1875.

‡ Le Mouvement Médical, 1878, p. 552.

§ Lancet, July 19, 1879.

|| Loc. cit.

drosis, ephidrosis cruenta, sudor sanguinea, sudor cruenta, and bloody sweat) consists in the appearance at the outlets of the excretory ducts of the sweat glands of a reddish fluid containing blood. It is usually in small quantity and localized, and oozes forth upon the surface of the skin without giving rise to any lesion of the epidermis. It is to be considered as a cutaneous hemorrhage, which takes place about the sweat glands, emptying itself through the sweat ducts. It is a very rare disorder. An interesting case is reported by Hart.* McCall Anderson has also reported cases.† Instances of chromidrosis have in some cases been designated hæmatidrosis, and *vice versa*, but in the disease under consideration the fluid poured out contains or consists largely of blood, which is not the case in chromidrosis. The affection has been observed most frequently in young women with faulty menstruation. Occasionally it has been noted to precede the establishment of the menstrual function, as in W. T. Mitchell's case.‡ The exciting causes which may produce it are passion and unusual nervous strain. The treatment is that of purpura.

Under the title of NEUROTIC EXCORIATIONS, Erasmus Wilson§ has described a number of cases, some of which may be regarded as examples of irregular hæmatidrosis. These cases, met with in young women and in adults of both sexes, and dependent on general functional debility, are characterized by variously sized and shaped, small or extensive, superficially excoriated patches, preceded usually by more or less itching. The primary lesions vary, but are usually erythematous, papular, or bullous, accompanied, as a rule, with burning, tingling, or itching. From scratching, an excoriation, with or without bleeding, results; which may remain open or may heal in the course of a variable time. The process usually repeats itself, and may become chronic.

In this connection the cases of so-called BLEEDING STIGMATA, instances of which have from time to time been reported, may be briefly referred to. The disease here is without question a form of hæmatidrosis, sometimes preceded by the formation of blebs,

* Richmond and Louisville Med. Jour., Jan. 1875, p. 98.

† Journal of Cutaneous Medicine, Oct. 1867; also Lectures on Clinical Medicine, London, 1877.

‡ Ohio Med. Recorder, May, 1881.

§ Lectures on Dermatology, p. 192. London, 1875.

and usually associated with hysteria and ecstatic symptoms, as in the well-known case of Louise Lateau, which has been made the subject of study by Warlomont* and Lefebvre.† The bleeding may occur from one or from many spots, which may vary as to size and shape, and from various regions. It may continue a short or a long period, usually hours, recurring at irregular intervals. The quantity of blood discharged is generally small. In the case of Louise Lateau, however, where the stigmata were numerous, the amount lost at first on each occasion was estimated at a quart; in subsequent hemorrhages it is said to have been very much less. A similar example is reported from Bahia,‡ entitled “la stigmatisée de Bahia,” where, however, the peculiar ecstasies of Louise Lateau were absent.

* Louise Lateau: Rapport Médical. Paris et Bruxelles, 1875.

† Louise Lateau, de Bois d'Haine; sa vie, ses ecstases, ses stigmates, Louvain, 1873.

‡ Le Mouvement Médical, No. 1, 1877.

CLASS V.

HYPERTROPHIÆ—HYPERTROPHIES.

A NUMBER of diseases naturally group themselves into this class. They are characterized by an increase of the elements of the normal tissues of the skin. The various structures which constitute the integument are all subject to hypertrophy, the process either confining itself to one tissue or attacking several or all of the tissues simultaneously. The diseases may have their seat exclusively in the epidermis, as in chloasma and callosity, or they may involve both epidermis and papillary layer, as in ichthyosis and wart. In other cases the corium is the chief seat of the process, as, for example, in elephantiasis. The hair and nail may also suffer.

The hypertrophies are, with several exceptions, characterized by the absence of inflammatory symptoms. In the majority of instances they give rise to no serious inconvenience, and in these cases are to be viewed in the light of deformities. Their course is slow. They may continue years or a lifetime. They may be congenital or acquired; the greater number are acquired. Their pathological features have been already referred to in the consideration of the general pathology of the skin.

LENTIGO.

Syn., Freckle; *Germ.*, Sommersprosse; *Fr.*, Lentigo.

LENTIGO CONSISTS IN A PIGMENT DEPOSIT, CHARACTERIZED BY IRREGULARLY-SHAPED, PIN-HEAD OR PEA SIZED, YELLOWISH, BROWNISH, OR BLACKISH SPOTS, OCCURRING FOR THE MOST PART ABOUT THE FACE AND THE BACKS OF THE HANDS.

Symptoms.—The affection varies exceedingly in the degree of its development. At times the lesions are few and scattered, while in other instances and ordinarily they are present in large

numbers. They are usually small, varying in size from a pin-head to a small split pea, and are roundish, irregularly shaped, or angular. They are either isolated, in which case they are often conspicuous, or they are aggregated and incline to coalesce; they assume no regularity of distribution, but show themselves symmetrically. Their color varies from pale yellow to yellowish-brown or black. When profuse, they are apt to give the skin a decidedly dirty look. Their common seat is the face, especially over the cheeks; they appear also very frequently upon the backs of the hands and forearms. Other regions may also be attacked. They are unattended by itching or other subjective symptoms.

Persons of all ages, from childhood to old age, are liable to them; they are not seen, however, in very young children; rarely before the third year. They are common to both sexes. They usually manifest themselves in those of light complexion, and indeed are rarely absent in red-haired subjects; but they are also met with in those with dark complexions. Mulattos often show them markedly. Their course is chronic, lasting for years or a lifetime. They ordinarily make their appearance in the summer season, sometimes quite suddenly, and, continuing through the season, fade away, but not completely, with cold weather, to return the following season. As the individual advances in years they are apt to disappear and remain away permanently. Under the title of "*melasma lenticulare*," or "*lenticulæ nigræ*," Wilson* gives the case of a young lady whose body was sprinkled over with black freckles. They appeared first round the waist, and thence spread upwards and downwards to the neck and thighs. Their color was a rich brown-black, and they had existed for three years. They began as small itchy papules at the apertures of the follicles, and when the acute stage was passed the pigment made its appearance and became diffused around the aperture of one or several follicles to the extent of two and three lines. Freckles, of an intense brownish or blackish color, are also met with as one of the symptoms in certain rare forms of atrophy of the skin complicated with telangiectasis, as in the cases reported by Hebra and Kaposi, Taylor, and myself. (See Atrophy of the Skin.)

Etiology.—It is well known that they are always more marked

* Lectures on Dermatology, p. 22. London, 1878.

during the summer, and especially after exposure to the sun; but Hebra has particularly called attention to the fact that they sometimes appear upon parts of the body which are rarely, if ever, exposed to the light or sun, as, for example, the back, buttocks, and penis,* when they are known as "cold freckles." It may be stated, then, that other causes, as in the case of the rare form of atrophy of the skin referred to, are to be regarded as giving rise to the affection. The sun in the majority of cases, however, may be considered as the exciting cause.

Pathology.—In anatomical structure the freckle is found to consist of a circumscribed, increased amount of normal pigment. It differs from chloasma only in the peculiar form and size of the lesion.

Treatment.—The remedies which are used for removing these blemishes are the same as those employed in the treatment of the more serious disfigurement chloasma, to be mentioned presently.

CHLOASMA.

CHLOASMA IS A PIGMENTARY AFFECTION, CONSISTING OF VARIOUSLY SIZED AND SHAPED, MORE OR LESS DEFINED, SMOOTH PATCHES, OR OF A DISCOLORATION, YELLOWISH, BROWNISH, OR BLACKISH IN COLOR.

Symptoms.—The surface of the skin is unaltered in structure, the affection being one simply of coloration. The patches may be of any size, from a coin to the hand or larger; they may likewise be of any shape, but are frequently roundish or irregular in outline, and usually possess a tolerably sharp line of demarcation. They have a yellowish or brownish, muddy, dirty color, and may be even blackish (MELASMA, MELANODERMA†). Chloasma may also show itself over the whole surface in the form of a universal discoloration, variable as to color; this is observed at times in the course of certain diseases of internal organs.

The chloasmata may be divided into those which are *idiopathic* and those which are *symptomatic*. Under the first head are included all those forms of pigmentation acquired through external

* I have had the opportunity of seeing several cases in which they occurred upon these regions. See also Hebra's Atlas d. Hautkrankh., Lief. VII., Tafel 5.

† A description of the various forms of melanoderma may be found in an article by Dr. J. C. White, in Bost. Med. and Surg. Jour., vol. i., 1878.

agencies, among which may be mentioned the condition resulting from constant and long-continued scratching, which is practised in the course of certain diseases of an itching character, as in eczema and pediculosis. Chemicals and various medicinal substances, as, for example, sinapisms and blisters, also produce more or less pigmentary deposit. Heat, especially in the form of the rays of the sun, is a well-known cause of discoloration. When the action of these agents is kept up, the result is apt to be lasting.

Belonging to the symptomatic group, we find the disorder known as *chloasma uterinum*, as well as those discolorations which occur in connection with certain general diseases, as, for example, tuberculosis, cancer, and malaria; in these latter cases the pigmentation is, as a rule, diffused. The pigmentation of the skin occurring in Addison's disease is perhaps the most striking example of this form of *chloasma*. Here, in typical cases, the coloration is brownish with an olive-greenish or bronze tint, and is general, although, as a rule, especially pronounced upon regions having a disposition to normal increase of pigment, as the face, backs of the hands, axillæ, areolæ of the nipples, and genital organs; the hair also may become darkened. It may also occur with or follow other pigmentary changes, as of the hair. Gaskoin* reports a case, occurring in a woman aged forty-five, where the patch, situated on the cheek, near the nose, was intensely dark. It had existed nine years. The color of her hair had fifteen years previously changed from caroty-red to black. More or less *chloasma* is also found in senile atrophy, and in the course of other diseases of the skin, as scleroderma, morphea, lepra, syphilis, and pellagra.

CHLOASMA UTERINUM.—It occurs in its mildest expression about the eyelids, especially at the menstrual period, causing a duskiess or swarthiness of the complexion, which may last a few days or be permanent. It shows itself in all degrees of severity, and is especially pronounced in brunettes. The condition is allied in its general pathology to certain forms of disease usually classified with chromidrosis. As usually encountered, the disease consists in the presence of one or several patches of pigment deposit, appearing generally about the forehead, but also upon other parts

* Brit. Med. Jour., April 19, 1879.

of the face, and upon the trunk about the nipples and abdomen. The condition is oftenest observed in the form of a broken or continuous patch involving the forehead, usually beginning below the line of the hair and terminating above the eyebrows, and extending transversely from temple to temple. The patch may be distinctly defined or may fade imperceptibly into the normally-colored skin. Occasionally the whole face is occupied by a diffused discoloration, resembling a mask. The color varies from dirty yellow to brown. As a rule, there is no desquamation, the surface being smooth. Occasionally it is associated with oily seborrhœa. It is seen most frequently between the ages of twenty-five and fifty, and is caused, in the majority of cases, by changes, physiological and pathological, which take place in connection with the uterus. Pregnancy is the commonest cause. McLane* records an extraordinary case occurring in an anæmic woman at the eighth month of pregnancy. The pigmentation exhibited itself in patches varying in size from one to six inches square, the largest being on the neck, back, and thighs, in which localities the skin was very nearly the color of that of a negress. There was no unusual pigmentation about the nipples, or along the median line of the abdomen. The pigmentation may extend over the whole surface and resemble Addison's disease, as in a case noted by Murphy;† also in an instance recorded by Wilson,‡ where the pigmentation spread from the breasts as a centre until it covered nearly the whole of the anterior aspect of the trunk; a year after delivery it had entirely disappeared. Various other disturbances of the uterine function may also occasion it. It appears in single as well as in married women; it is, however, of comparative rarity in the single, and in these cases is generally associated with either dysmenorrhœa, chlorosis, anæmia, or hysteria. In single women it is usually encountered between the ages of thirty and fifty. It seldom shows itself after the climacteric period in either the single or the married.

Etiology.—The causes which give rise to chloasma are numerous, and are very different in their nature; they are to be considered in connection with the respective varieties of the disorder,

* Amer. Jour. Obst., Oct. 1878.

† Obst. Gaz., Jan. 1880.

‡ Lectures on Dermatology, London, 1878.

which are named from an etiological stand-point. The causes of the more important varieties have been already referred to. While much more common in women, the affection is also met with in men. Shock to the nervous system, neurotic disturbance, irritation of the various internal organs, are all well-known causes. The relation of pigmentary deposits in the skin to anæmia, as Erasmus Wilson has pointed out, is in some cases intimate. The discolorations of syphilis, as the pigmentary syphiloderm, occurring in anæmic subjects, may thus be accounted for.

Pathology.—The affection has its seat in the mucous layer of the epidermis. It consists in an increased deposit of normal pigment. The process is, without doubt, under the control of the nervous system, as is the case with certain other varieties of pigmentation. The pigment may be absorbed in time, the part again assuming its natural color.

Diagnosis.—It is liable to be confounded with tinea versicolor, on account of the similarity in the color of the patches; beyond this point, however, the two diseases have nothing in common. The patches of tinea versicolor are usually more numerous than those of chloasma, and always occupy the trunk, a region seldom invaded by chloasma except in the form of a general coloration. The face is the commonest seat of chloasma, a region practically exempt in tinea versicolor. The characters of the patches are different, and if carefully examined they cannot be mistaken for each other. Those of chloasma are usually smooth, presenting no alteration in the texture of the horny layer of the epidermis; those of tinea versicolor are more or less furfuraceous, which condition can be readily demonstrated by gently scraping the skin with the finger-nail. Chloasma having attained a certain size extends itself generally slowly; tinea versicolor grows perceptibly, generally until a large area is covered.

Treatment.—Owing to the disfigurement which lentigo and, more especially, chloasma occasion, treatment is frequently called for. Attention should be first directed to the cause of the affection, which in the case of chloasma may sometimes be determined. The suitable remedies, depending upon the condition, are then to be prescribed and persevered in.

Benefit may be obtained from the use of external agents, which are applied with a view of acting directly upon the epidermis and

destroying the accumulated pigment. Among the various remedies which have been employed for this purpose, corrosive chloride of mercury, ammoniated mercury, subnitrate of bismuth, potash soap, sulphur and its preparations, tincture of iodine, acetic acid, and hydrochloric acid, may be mentioned. The corrosive sublimate is the best, and may be used in the form of a lotion with water, almond emulsion, or alcohol; its strength should vary from half a grain to five grains to the ounce, according to the susceptibility of the skin, the extent of the affection, and the effect produced. Two grains to the ounce will in most cases be found sufficiently strong. A lotion containing two grains of corrosive sublimate, half a drachm of tincture of benzoin, and one ounce of almond emulsion is a desirable formula. Hardy speaks well of the following:

R Hydrargyri Chloridi Corrosivi, gr. viiss;
Zinci Sulphatis, ʒss;
Plumbi Acetatis, ʒss;
Aquæ, fʒiv.
M.—Sig. Lotion. Apply morning and evening.

Acetic acid alone or in combination with sulphur, in the form of a paste, is favorably spoken of by Neumann. Bulkley gives the following:

R Hydrargyri Chloridi Corrosivi, gr. vi;
Acidi Acetici Diluti, fʒii;
Boracis, ʒii;
Aquæ Rosæ, fʒiv.
M.—Sig. Lotion. Apply twice daily.

For the rapid removal of patches, the following method, suggested by Hebra, may be employed. A solution of corrosive sublimate, five grains to the ounce of alcohol or water, is applied continuously by means of compresses. The cloths are to be kept moist by the addition of the fluid from time to time, and are to be retained in position for about four hours, when the skin will be blistered. The epidermis is to be removed and the surface dressed with starch powder. The newly-formed epidermis will be devoid of pigment. The relief, however, is not apt to be permanent, the discoloration usually returning in a variable time.

Ointments may also be employed. Veratria, from ten to twenty grains to the ounce, may be used; also, strong ammoniated mer-

cury ointment, and the ointment of the nitrate of mercury, from one to four drachms to the ounce of simple ointment. An ointment composed of one drachm each of ammoniated mercury and subnitrate of bismuth to the ounce is favorably spoken of by Neumann and others.

In connection with the subject of chloasma the several discolorations of the skin due to the deposit of certain pigments may be referred to. Although of a different nature, they give rise, according to their cause, to transitory or permanent discolorations, which sometimes resemble the chloasmata in appearance. The staining due to extravasated blood, as in hemorrhages; to the coloring matter of the bile, as in jaundice; and to the prolonged internal use of nitrate of silver, may be mentioned.

The discoloration of the skin resulting from the internal use of nitrate of silver, constituting the condition known as ARGYRIA, is of a bluish, bluish-gray, slate, bronze, or blackish color, varying as to shade. It occurs over the surface generally, but is more pronounced upon those parts ordinarily exposed to the light, as the face and hands. According to Riemer* and Neumann,† who have made studies of the subject, the pigment, in the form of reduced silver, is found in all parts of the skin except the lining epithelia of the glands and the cells of the mucous layer of the epidermis. The most marked deposit is found immediately beneath this layer, being sharply defined as a blackish border. It is made up of the minutest granules arranged in groups and in streaks. The deposit also takes place in the internal organs. Concerning the treatment of this disfigurement, iodide of potassium has been suggested by various authors; but I am aware of only two cases, reported by Dr. L. P. Yandell,‡ where this remedy, together with mercurial vapor baths, has been successfully employed. The patients were syphilitic, and took from ten to sixty grain doses thrice daily for a period of months. In both cases the fading of the discolored skin was gradual; in one a faint trace remained, in the other the cure was complete.

* Archiv der Heilkunde, 1875 u. 1876.

† Lehrbuch der Hautkrankheiten, 5te Auflage. Wien, 1880.

‡ American Practitioner, Sept. 1872.

Discoloration of the skin is also observed as the result of tattooing. In this process the coloring matter, usually vermilion, charcoal, gunpowder, or indigo, is inserted into the skin by means of needles, and, being insoluble, remains where it has been mechanically placed. One of the most remarkable examples of a tattooed individual, where the whole integument was occupied with elaborate figures and designs, came under observation a few years ago in Vienna.*

NÆVUS PIGMENTOSUS.

Syn., Pigmentary Mole; *Germ.*, Pigmentmal; *Fleckenmal*; *Fr.*, Nævus Pigmentaire.

Pigmentary nævus may consist simply of a circumscribed deposit of pigment in the skin, without hypertrophy of the connective-tissue elements or of the hairy system; or, in addition to the excess of pigment there may be hypertrophy of all the cutaneous structures, especially the hair. Nævi vary greatly as to size and shape; they may be small, the size of a split pea or bean, or large, covering a considerable surface. In shape they may be roundish or ovalish, but are often irregular in outline. They are more or less deeply pigmented, varying in color from yellowish brown to blackish brown. They are flat, on a level with the surrounding skin, or more or less raised. Their surface is either soft and smooth, without change in the texture of the skin, constituting NÆVUS SPILUS; or uneven and furrowed, or rough and warty, when the growth is called NÆVUS VERRUCOSUS. Sometimes they are met with as thick, soft, fatty, connective-tissue growths, of variable dimensions, the condition being designated NÆVUS LIPOMATODES. They may or may not possess a growth of hair; frequently they are without hair, while in other cases they exhibit an abundant growth, which may be either of the nature of lanugo or stiff. When the nævus is hairy, it is termed NÆVUS PILOSUS.

Pigmentary nævi may be single or multiple.† They occur upon

* The case was reported by Hebra in his *Atlas der Hautkrankheiten*, Lief. VIII., Tafel 10, Wien, 1872. The man was on exhibition in this country.

† A remarkable case of multiple, monolateral, pigmented nævus, distributed in the form of bands of scattered moles, varying in color, occupying the left side of the trunk, is reported by Dr. J. Nevins Hyde in the *Chicago Med. Jour. and Exam.*, Oct. 1877. A similar case is recorded by T. de Amicis in

various parts of the body, but are chiefly encountered upon the trunk, and more particularly the face, neck, and back. Sometimes they appear over the course of well-known nerve tracts. They are met with in both sexes. They may be congenital or acquired. The small, flat, and smooth pigmentary nævi without hair, seen so commonly upon the trunk, are almost invariably acquired during the life of the individual. Having attained a certain size, which seldom exceeds that of a coffee-grain, to which they frequently bear a resemblance in both shape and color, they do not incline to grow larger, but remain for a long time without undergoing change. On the other hand, the larger, raised, and hairy nævi are usually congenital and permanent growths. The coloring matter, consisting of pigment cells and granules, has its seat in the mucous layer of the epidermis and in the corium. They may be removed by means of the knife or with caustics; when they are small and flat, they may be operated upon with potassa or ethylate of sodium.

MOLLUSCUM EPITHELIALE.

Syn., Molluscum Sebaceum; Molluscum Contagiosum; Epithelioma Molluscum; Tumores Sebipari; Molluscum Sessile; Condyloma Subeutaneum; *Fr.*, Acne Varioliformis; Tumeurs Folliculeuses.

MOLLUSCUM EPITHELIALE IS A DISEASE OF THE EPITHELIUM CHARACTERIZED BY ROUNDED, SEMIGLOBULAR OR WART-LIKE PAPULES OR TUBERCLES, OF A WHITISH OR PINKISH COLOR, VARYING IN SIZE FROM A PIN-HEAD TO A PEA.

Symptoms.—Usually they are observed of the size and shape of a small split pea. They occur singly or, as is generally the case, in numbers, and may ordinarily be seen in various stages of development upon the same patient. Their color is that of normal skin or pinkish. They frequently have a decided waxy look, and at times resemble a drop of white wax upon the skin. The glistening look is due to the skin being stretched. They have also been compared to small pearl buttons. Upon their summits they are often

a girl, a dark brunette, aged seventeen. The whole cutaneous surface was covered with hundreds of disseminated, blackish-brown, pigmented nævi, varying in size from a pin-head to a bean, some of which were hairy. Upon the left palm there existed one the size of a five-cent silver piece. *Il Mov. Med.-Chirurg.*, Napoli, 1875; also, *Lo Sperimentale*, March, 1876.

flattened and have a depression. In the centre a darkish point, representing the aperture of the follicle, is commonly present; in other cases it is absent. To the touch they are generally firm, their consistence depending, however, upon the condition of the contents, which is liable to alteration. Their common seat is upon the face, especially the eyelids, cheeks, and chin. They are also met with upon the neck, breast, and genitalia. They may also occur upon the head, and upon the extremities, but are never met with on the palms or soles. Rarely, the disease is general. Sometimes the lesions are grouped. They have a broad base, and are seated close to the surface. They increase in size with variable rapidity, sometimes rapidly, at other times slowly, and, as a rule, are unaccompanied by inflammatory signs. Occasionally, however, they are observed to be the seat of more or less inflammation, when they may be mistaken for other diseases. They eventually terminate by disintegration and sloughing of the mass. They are accompanied by little or no inconvenience.*

Etiology.—The disease is not common. It is observed to occur chiefly in children, and for the most part among those of the poorer class who are neglected and ill fed, but it may also occur in adults. Its cause is as yet unsatisfactorily explained. In regard to its supposed contagious nature the opinions of careful observers differ to such an extent that no conclusion can be reached. Its contagious nature seems to be more generally entertained in England than elsewhere. It is doubtless of much more frequent occurrence in that country than here. In my experience in Philadelphia it is of rare occurrence. Inoculation with the matter taken directly from the tumor, as performed by Hebra, Duckworth, Vidal, and others, failed to develop the affection. It must be stated, however, that it is not infrequently noted to attack several members of a family, from which occurrence it is supposed by some to possess contagious properties. On the other hand, its presence limited to single cases in overcrowded children's asylums is of equal weight against its contagious character. The ground for the proof of its

* For interesting observations on the disease, consult Hilton Fagge, *Guy's Hospital Reports*, 1870; Dyce Duckworth, *St. Bartholomew's Hospital Reports*, vols. iv and viii., 1868, 1872; Hutchinson, *Lectures on Clinical Surgery*, vol. i., Part I., London, 1878; and Geo. H. Fox, *Chicago Med. Jour. and Exam.*, May, 1878.

contagiousness is therefore, I think, at present insufficient. I cannot recall a case in which the evidence of contagion appeared to me to be conclusive.

Pathology.—Difference of opinion holds as to the nature of the disease, some observers regarding the process as having its seat in the sebaceous glands, while others, the majority, maintain that it is an affection of the rete mucosum. Among authorities who speak in favor of the old view, namely, of its sebaceous nature, Kaposi,* Vidal,† Tilbury Fox,‡ and Hutchinson§ may be quoted. On the other hand, many excellent observers, as Virchow,|| Retzius,¶ Bizzozero and Manfredi,** Lukomsky,†† Boeck,‡‡ Simon,§§ Piffard,|||| Crocker,¶¶ Sangster,*** and Thin,††† do not believe in its sebaceous origin, but hold that the process begins in the mucous layer of the epidermis, and is in fact a hyperplasia of this structure. If one of the little tumors be incised with a knife, the contents may usually be expressed in the form either of a consistent whitish or yellowish rounded body, or of a milky or thick cheesy fluid or mass. Microscopically, it is seen to consist of epithelial cells with nuclei in abundance, and peculiar bodies, roundish or ovoid in shape, sharply defined, and having a fatty appearance, which have received the name of “molluseum bodies.”

Virchow's original observations, as follows, are doubtless in the main correct. “If a section of one of these tumors be made, an appearance as of a lobulated gland is seen. Two distinct parts

* Vierteljahr. für Derm. und Syph., IV. Jahrg., 3 Heft (1877).

† Le Progrès Médical, p. 450, June 9, and p. 489, June 23, 1877.

‡ Epitome of Skin Diseases, Phila., 1879.

§ Loc. cit.

|| Virchow's Archiv, 1865.

¶ Nordiskt Med. Arkiv, Bd. ii. No. 11; also Deutsche Klinik, 1871, No. 50; 1872, Nos. 2, 4, 6, 8. Vierteljahr. für Derm. und Syph., IV. Jahrg., 3 Heft (1877).

** Archiv f. Derm. u. Syph., 4 Heft, 1871, p. 599; also 4 Heft, 1876.

†† Virchow's Archiv, Bd. lxx.

‡‡ Vierteljahr. für Derm. und Syph., II. Jahrg., 1 Heft (1875).

§§ Ibid., III. Jahrg., 3 Heft (1876).

|||| Diseases of the Skin, p. 345. New York, 1876.

¶¶ Lancet, vol. i., 1881.

*** Med.-Chir. Trans., vol. lxiii.

††† Brit. Med. Jour., Jan. 15, 1881; also Jour. of Anat. and Phys., vol. xvi.

may be recognized: one soft, occupying the interior, which may be pressed out, the other firmer, following the walls of the cavity; it is the Malpighian layer greatly developed. The soft substance is composed of epithelial cells, polygonal, and mostly without nuclei, having depressions, in which one or more peculiar bodies are lodged. Nowhere can be seen the fatty granules and oily globules which are seen in sebaceous glands. These bodies have the greatest resemblance to swollen starch granules. They are due to a peculiar degeneration of the epithelial cells."

Virchow further considers the disease to begin in the hair-follicles, the folded gland-like appearance being due to a hyperplasia of its epidermal lining. The studies of Thin* confirm these observations. The growth "begins in the hair-follicle between the root-sheaths and the shaft of the hair, but soon takes root among the cells in the free surface of the epidermis which surrounds the follicle. It is attended with a continuous growth of epidermis downwards into the cutis, the successive layers of newly-formed cells becoming successively the seats of the specific change." The nature of the so-called molluscum bodies is regarded differently by the authorities quoted, but the opinion generally maintained is that they are cells of the mucous layer which have undergone change. Kaposi considers them as epidermal cells with modified protoplasm, and states that they are not peculiar to molluscum, but are found in other diseases. Thin gives the development of an epidermic cell into a molluscum body as follows: "The first certain change is that of the cell becoming filled with minute granules, the nucleus remaining entire and being generally found near the wall of the cell. Clear spaces are seen in this granular substance,—so-called vacuoles. In succeeding stages the granules become larger and fuse into a homogeneous substance, the nucleus in the mean while losing its spherical form and becoming finally lost. In the ultimate stage, this homogeneous substance fills the whole of the cell, which is then known as a molluscum body, but the cell-wall is not involved in the change, and retains its epidermic character. In the final stages the molluscum substance may fall out and leave behind it the horny capsule in which it was contained."

* Loc. cit. Jour. of Anat. and Phys., vol. xvi. p. 206.

Diagnosis.—Molluscum epitheliale should not be confounded with molluscum fibrosum. These two kinds of tumor may be readily distinguished by their anatomical characters. In epithelial molluscum the opening of the follicle is usually to be seen as a darkish point in the centre of a slight depression on the apex of the tumor. The growths of molluscum fibrosum are made up of a connective-tissue new formation, firmly seated in and beneath the skin, and possess a firm, fibrous feel. The little tumors of molluscum epitheliale usually occur about the face, and in limited numbers; those of molluscum fibrosum commonly appear about the body, and often in great numbers. The tumors of epithelial molluscum are prominently raised from the skin, and are superficial in their seat; those of molluscum fibrosum are located in the skin itself, and even in the subcutaneous tissues. Molluscum epitheliale is, as a rule, a disease of infancy and childhood; molluscum fibrosum is an affection of adult life. The disease is also to be distinguished from papillary warts. The resemblance between these two affections is often marked, particularly in those cases of molluscum which are imperfectly developed, the growth assuming more of an acuminate than of a rounded form.

Treatment.—Local remedies alone are required to relieve the disorder. Where the lesions are small or numerous, they may be treated with one of the stimulating ointments, as white precipitate or sulphur ointment. The larger tumors are to be treated separately, and may be removed by the knife; they may also be destroyed by means of mild caustic applications. Free but careful incision upon the top of the tumor is the best treatment, after which, in the majority of cases, the mass may be easily forced out of its seat. If adherent, it should be extracted with the forceps. Nitrate of silver may be applied to the cavity and base after enucleation. When the opening of the follicle is widely distended, the contents may sometimes be squeezed out by firm pressure with the fingers against the sides of the tumor. They may also be treated with a ligature, when their bases are to be touched with nitrate of silver. Whatever the method of treatment adopted, it should never be heroic, for it must not be forgotten that the affection tends to spontaneous recovery.

Prognosis.—The disease is amenable to treatment, which, if properly carried out, is rarely followed by a return of the affec-

tion. If, on the other hand, the growths are only partially destroyed, they are apt to form again.

CALLOSITAS.

Syn., Tyloma; Tylosis; Callus; Callosity.

CALLOSITAS CONSISTS IN THE FORMATION OF A HARD OR HORNY, THICKENED PATCH OF SKIN, VARIABLE AS TO SIZE AND SHAPE, GRAYISH, YELLOWISH, OR BROWNISH IN COLOR, UNATTENDED BY PAIN, OCCURRING FOR THE MOST PART ABOUT THE HANDS AND FEET.

Symptoms.—The skin is increased in thickness, and presents a firm, dense, more or less circumscribed structure. The degree of hardness varies considerably, sometimes being horny. The patches are usually the size of a coin, are apt to be roundish in shape, and possess a variable amount of elevation above the surrounding skin. In color they are grayish, yellowish, or brownish; this, however, is influenced by the amount of friction to which the part is subjected, and the occupation of the patient. They usually have their seat upon the palms, fingers, soles, and toes, and more particularly about parts exposed to pressure. They are frequently encountered upon the hands of mechanics and others who use tools, as shoemakers, smiths of various kinds, and carpenters. They are seen also upon the fingers of violin and harp players. Upon the feet they occur for the most part about the soles, particularly about the ball of the great toe and upon the side of the little toe. They may remain unchanged for a long time, or they may undergo spontaneous involution, after the cause has been removed. Their development is always gradual. Inflammation, occasionally terminating in an abscess, may now and then accompany them.

Etiology.—They are, in the majority of instances, caused by external influences; at times, however, they appear to be developed independently of any exciting or external cause. Usually they will be found to depend upon the continued application of pressure or friction, as in the case of the hand of the mechanic, the effect of his tools; or, if upon the foot, they will be noticed to result from the wearing of ill-fitting shoes, or from unusual walking. They are commoner in men than in women, and may occur at any age, although they are more often encountered in middle and old age.

Pathology.—The patch of callus is a simple structure, made up of numerous layers of epidermis, which have accumulated one upon the other. A transverse section, as Simon* has shown, reveals an hypertrophy of the horny layer, the corium remaining normal. The cells of the epidermis become so closely packed as often to simulate horn substance.

Treatment.—When the callosity is a source of inconvenience, it may be best removed by means of the knife. The part should be repeatedly soaked in warm water, when it will become more or less softened, and will permit of being pared or scraped off, layer by layer, with a sharp knife. A poultice may also be used for the same end. Caustic potash solution in varying strength, suitable to the part to be attacked, will also prove serviceable: it is, however, to be employed cautiously, lest it work its way down and destroy the papillary layer. Where the formation is the result of the occupation, it is not advisable to remove it; not infrequently it ceases after a time to be produced, and in this event disappears spontaneously.

CLAVUS.

Syn., Corn; *Germ.*, Leichdorn; *Huhnerauge*; *Fr.*, Cor.

CLAVUS IS A SMALL, CIRCUMSCRIBED, USUALLY FLAT, DEEP-SEATED, MORE OR LESS HORNY FORMATION, PAINFUL UPON PRESSURE, SITUATED FOR THE MOST PART ABOUT THE TOES.

A corn usually presents the general outward appearance of a callosity. It is made up exteriorly of thickened skin, is often more or less polished upon its surface, and has a hard, horny feel. On the other hand, it may be soft, possessing features similar to those of the wart. It is rounded and circumscribed, varying in size from a pin-head to a small split pea. It is painful upon pressure, and frequently is accompanied by shooting sensations independently of pressure. If the cause which occasioned the corn be kept up, inflammatory symptoms may develop. The common seat of corns is the outer surface of the little toe; they also occur between the toes, and upon the soles of the feet. Existing between two toes, the corn is accompanied by more or less maceration, and appears

* Die Hautkrankheiten, p. 29. Berlin, 1851.

as a soft or spongy formation, which receives the name of *soft corn* in contradistinction to the *hard corn*. One, two, or a number of corns may be present, in which case they interfere with walking or even with standing.

Etiology.—They are the result either of continued pressure or friction, and in the vast majority of cases may be referred to improperly-fitting or tight shoes.

Pathology.—The growth is made up of a circumscribed, excessive development of the epidermis, of the same character as that observed in callosity, and of a central portion, or core. The latter extends quite deeply into the tissues, in the form of an inverted cone, the base being directed outwards, and appearing upon the surface as a rounded spot. It consists of a whitish, opaque, firm, tenacious body, with its apex resting upon the papillary layer of the corium. In structure it is composed of epidermic cells, arranged in concentric laminae. One or more cores may exist. The corium beneath may be either atrophied or hypertrophied. The pain attending corns is produced by the core pressing upon the true skin, causing irritation of the nerve filaments of the papillae. It is often intermittent.

Treatment.—If the cause be removed, the treatment is sufficiently simple. On the other hand, if improperly-fitting shoes and other causes be persisted in, much delay and difficulty may be experienced in relieving the condition. If the patient is obliged to walk much, the corn should be protected by a piece of cut felt or surrounded by narrow strips of adhesive plaster. The foot should be frequently soaked in warm water, after which the outer layers will be macerated and may then be removed by scraping or picking with a pointed knife. A bread and milk poultice, applied to the part by a bandage before retiring, and kept on all night, will generally give relief. This treatment, repeated for several nights in succession, will soften the growth to such an extent that it may in some cases be extracted from its bed. Various plasters are recommended, most of which consist of resin, galbanum, or pitch, together with acetic acid, subacetate of copper, chloride of ammonium, carbonate of potassium, and like substances. Diachylon plaster may also be used. Nitrate of silver, in solid stick form, may be used with advantage after the corn has been sufficiently softened, and will be found useful in soft corns occurring between

the toes. A coating of flexible collodion may be employed in painful soft corns. Potassa with water or alcohol, half a drachm or a drachm to the ounce, may be applied where the epidermis is hard and thick; the application should be made with care, and only to the part to be acted upon.

CORNU CUTANEUM.

Syn., Cornu Humanum; Cutaneous Horn; Horny Excreescence; Horny Tumor; *Germ.*, Hauthorn; *Fr.*, Production Cornée; Corne de la Peau.

CORNU CUTANEUM IS CHARACTERIZED BY THE DEVELOPMENT OF A TRUE HORNY FORMATION ARISING FROM THE SKIN, VARIABLE AS TO SIZE AND SHAPE.

Symptoms.—When fully developed, the excreescence is a veritable horn, differing but slightly, if at all, from that found normally upon the lower animals. It is a solid, hard, dry formation, and is observed to have a more or less laminated, wrinkled, roughened, uneven surface. In form it is usually elongated and roundish or conical; occasionally it assumes a flattened form, in which case the growth is but little elevated above the surrounding skin. Horns vary as to shape, but are apt to be crooked, twisted, and bent, being rarely straight, and terminate either pointedly or with a blunt end. Their color is usually grayish, but they may also be yellowish, brownish, or blackish. They grow to all sizes, varying from a few lines to many inches, their diameter being greater at the base than at the free extremity. They possess a concave or flattened base, which rests directly upon the skin, from which they spring abruptly. The tissues about their bases may be either normal or somewhat elevated; at times they are surrounded by an areola or by marked inflammation, which may be followed by suppuration.

Horns are usually solitary; occasionally, however, they are multiple. Bötge* describes two cases, one in a man aged sixty who had six horns, four on the nose and two on the left cheek. The second case was that of a girl aged nineteen, who in her second year had an extensive eruption, which was followed by wart-like

* Deutsche Zeitschrift für Chir., Bd. vi., 1876; also, Viertelj. für Derm. und Syph., Heft 1 u. 2, 1877.

growths. The lower portion of the body, from the crest of the ilium down, was studded with a great number of disseminated and grouped horns of various sizes. The gluteal regions were thickly and symmetrically set with them. Close to the navel there was a horn about six inches in height, while on the right labium there was one but a trifle shorter.

They may appear upon any region of the integument, but are more common about the face and scalp. Pick* records a case where the growth, originating in acuminate warts, occupied the penis, springing from the sulcus around its whole circumference. It was two inches in length and about half an inch in thickness. The patient was only twenty-two years of age, and the growth of but six months' duration. Jewett† noted a case where the horn measured three and three-quarter inches in length. A similar case is reported by Wilson.‡ Nine cases of horns of the penis are referred to by Pick.

They seldom make their appearance before the age of forty or fifty; they have, however, been met with in the young. As a rule, they are unattended by pain, but if knocked or disturbed they may subsequently be accompanied by uneasiness or pain about their bases. Their course is slow, growing with variable rapidity until they arrive at a certain size, when they not infrequently become loose and drop off, leaving an open, ulcerating base. When this takes place, they are very liable to be reproduced.

Etiology.—The causes are not satisfactorily determined. The affection is a rare one. A number of reported cases have been collected by Lebert,§ Wilson,|| Bergh,¶ and Damon.** An interesting case (with photograph) has been reported by Pancoast.†† Poreher‡‡ reports an instance where the horn measured seven

* Two colored plates accompany the article. *Viertelj. für Derm. und Syph.*, 1875, p. 315.

† *New York Med. Times*, 1853.

‡ *Lectures on Dermatology*. London, 1878.

§ *Ueber Keratose oder die durch Bildung von Hornsubstanz erzeugten Krankheiten und ihre Behandlung*. Breslau, 1864.

|| *Medico-Chirurgical Trans.*, 1844, vol. xxvii. p. 52.

¶ *Archiv für Derm. und Syph.*, 1873, Heft 2, p. 185.

** *Structural Lesions of the Skin*. Phila., 1869.

†† *Phot. Rev. of Med. and Surg.*, vol. i. No. 1, 1870.

‡‡ *Charleston Med. Jour. and Rev.*, 1855.

inches in length and two and three-quarter inches in diameter, which sprang from the forehead of a negress.

Pathology.—According to Lebert,* cutaneous horns spring from the deeper strata of the mucous layer of the epidermis, and consist of a hyperplastic growth of these cells. Inasmuch as this layer is present not only immediately above the papillæ of the corium, but also as a lining membrane in the follicles and glands, it will be seen that the disease may start in these latter structures quite as readily as from the free surface of the epidermis. Microscopic examinations by the same observer show longitudinal sections to be made up of a mass of “small columns, rods, or palisades lying close to one another, and so intimately united by a connecting substance as to appear blended into a homogeneous mass. The individual columns have a striped, shreddy appearance, and are made up entirely of epidermic cells arranged upon one another in an imbricated manner.” Transverse sections show roundish spaces, concentrically stratified, between the layers of which exist irregularly-placed epidermic cells, which are to be viewed as the connecting substance referred to in considering the longitudinal sections. The cells, as might be expected, are for the most part without nuclei, always belonging to the epidermic variety. Both Lebert and Virchow have demonstrated the presence of blood-vessels in the bases of horns. The character of the cutaneous base from which the exerescence proceeds is found to vary.

Treatment.—After the horn has been detached from the skin, it is a necessary part of the treatment to destroy the base by means of some caustic, for which purpose chloride of zinc or caustic potash may be used. If there be a tendency to reproduction, the operation should be repeated.

VERRUCA.

Syn., Wart; *Germ*, Warze; *Fr.*, Verrue.

VERRUCA IS A HARD OR SOFT, ROUNDED, FLAT, OR ACUMINATED, CIRCUMSCRIBED, PAPILLARY FORMATION, VARIABLE AS TO SIZE.

Symptoms.—The wart presents itself in a number of forms, which are so different as to require separate descriptions.

* Loc. cit., p. 76.

VERRUCA VULGARIS.—This is the ordinary wart, commonly met with on the hands. It consists of a small, circumscribed, usually split-pea sized and shaped, elevated growth, with a broad base, seated securely upon the skin. It is soft or firm in consistence, or may even be hard, with a horny exterior. The surface is observed to be either smooth or rough, and to be studded with a number of minute elevations,—hypertrophied papillæ. These may be so irregularly developed as to give it a divided or lobulated appearance. The color is either that of the surrounding skin or darker; at times it is yellowish, brownish, or blackish. One, several, or great numbers may exist; they are apt to appear in groups, and commonly are in such close proximity as to touch and press upon one another. Their usual seat is about the hands, especially the fingers, but they may show themselves upon any region.

VERRUCA PLANA.—This differs from the above-mentioned variety in being flat and broad in form. They are usually the size of a split pea or a small finger-nail, and are but slightly elevated above the level of the surrounding skin. They occur either singly or in numbers, and are seen most frequently upon the back, especially in elderly people, when they are apt to be brownish or blackish in color (*Verruca senilis*, *Keratosis pigmentosa*). Not infrequently they are met with as very small, flat, rounded, discrete or confluent formations on the forehead and other regions of the face (*Verruæ minimæ*). Sometimes they develop in great numbers, especially on the face.

VERRUCA FILIFORMIS.—This variety assumes the shape of a small, thin, conical, or thread-like formation, usually about an eighth of an inch in length. They may appear either singly or in groups; rarely, however, do they occur in numbers. They are principally encountered on the face, on the eyelids, and on the neck.

VERRUCA DIGITATA.—The formation here, as in the case of the flat wart, consists of a slightly elevated, broad exerescence, varying in size from a split pea to a large finger-nail, and marked by a number of digitations coming from its border; these are often greatly developed, and give to the growth an appearance resembling a crab. They are commonly seen upon the scalp, where they may exist in numbers.

VERRUCA ACUMINATA.*—This variety consists of one or more groups of acuminate or irregularly-shaped elevations, usually so closely packed together as to form a more or less solid mass of vegetations (*Verruæ vegetantes*). The individual prominences vary considerably as to form; they tend to be pointed or tufted, but they may also be club-shaped, and in some cases exist as thick, short, fleshy excrescences, giving the growth the appearance of granulation tissue. They may be either sessile or pedunculated. In color they are pinkish or reddish; at times they are bright red, in other cases purplish, the shade depending upon the degree of vascularity and the region in which they happen to exist. They occur for the most part about the genitalia of either sex, more particularly about the penis and labia. Upon the penis they usually spring from the glans and the inner surface of the prepuce; upon the female they generally start from the inner surfaces of the labia and from the vagina. They are also encountered about the anus, mouth, axillæ, umbilicus, and toes. According to the region in which they are present, will they be dry or moist; about the genitalia, a yellowish, puriform secretion usually covers their surface, due to friction and maceration, which owing to the heat of the parts rapidly decomposes, producing a highly offensive substance. Crusts, made up of secretion and blood, are also not infrequently present. The odor from these condylomata is usually of a penetrating and disgusting character. They may attain a large size; not uncommonly they grow as large as a hen's egg, and at times to the size of a fist. According as they happen to be arranged and distributed, they present different appearances; they have been aptly compared to a head of cauliflower, to a cock's comb, to fungi, to raspberries, and to other forms of vegetation. Their development is rapid; not infrequently they attain considerable size in the course of a few weeks. They generally appear as luxuriant growths, tending to increase in size and to multiply; without interference they may assume large proportions and continue for an indefinite period. They are met with in both men and women, and are usually encountered in young people.

* Termed also Pointed Wart, Moist Wart, Fig Wart, Pointed Condyloma, Cauliflower Excrescence, *Verruca Elevata*, Venereal Wart; *Germ.*, Spitze Condylom; *Fr.*, Végétation Dermique.

Etiology.—The causes which give rise to warts are obscure. The various influences which are popularly assigned as causes, most of which are widely different in their nature, are, it need scarcely be stated, incapable of producing the disease. They occur in both sexes, and are much more common in the young than in the old. They are very common in children. They incline to appear in those of scrofulous habit.

In regard to the acuminate variety, or pointed condylomata, it is well known that they are often caused by the irritating secretions of venereal disease, more especially gonorrhœa; but they are never a manifestation of constitutional syphilis. The vegetating syphiloderm must not be confounded with this growth.

Pathology.—The anatomy of warts differs somewhat according to the variety, but in all forms there exists as a basis a connective-tissue growth, from which papillary hypertrophy takes place. The interior of the formation is supplied by one or more vascular loops, from which the structure obtains its vitality. In the common, hemispherical wart, the papillæ become greatly thickened and elongated, and are covered with a hypertrophic layer of epidermis, which gives it the hard or horny exterior.

The pointed warts, or condylomata, are exceedingly vascular, and are made up chiefly of connective-tissue elements, which form a mass of firm consistence. The papillæ are enormously hypertrophied, and are covered with an exuberant and extensive mucous layer, the cells of which are highly developed. The horny layer is seldom formed to any extent; but this is found to vary according to the locality in which the growth occurs.

Treatment.—Excision, by means of the knife or seissors, in many instances affords the most satisfactory results, the operation, as to the manner of cutting, varying somewhat with the form of wart under consideration. Many of the smaller formations are best removed by a pair of curved seissors, their bases being touched with the nitrate of silver stick. The dermal curette, or scraping spoon, may also be employed, especially in connection with other remedies. The ligature and the galvano-caustic wire may be advantageously employed where the growth is liable to be attended with hemorrhage, as in cases of acuminate warts about the genitalia. These may also be successfully treated by washing the parts with the liquor sodæ chlorinatæ and afterwards dusting with calo-

mel; or, with nitric acid or chromic acid. Carbolic acid also acts well. A powder composed of equal parts of burnt alum and powdered savine may likewise be used.

Common warts may, moreover, be treated satisfactorily by the application of various caustics, among which potassa, nitrate of silver, acid nitrate of mercury, chloride of zinc, nitric acid, chromic acid, hydrochloric acid, and acetic acid may be mentioned. Caustic potash, nitrate of silver, and chromic acid, in solution, will be found the most useful; in the case of the two latter substances, repeated applications may be required. Tincture of the chloride of iron may also be mentioned. In selecting a remedy, the variety and size of the growth, as well as the locality in which it occurs, should be considered. The strength of the solution is to be regulated according to the nature and exterior covering of the wart. In making the application of fluid substances, care should be exercised to protect the adjacent healthy skin; a layer of soft wax placed immediately around the growth will prevent the caustic from attacking the sound skin. In the case of multiple flat warts, precipitated sulphur made into a paste (at the time of using) with glacial acetic acid and glycerine, equal parts, may be employed with good result. McCall Anderson regards the use of arsenic internally with favor.*

Prognosis.—This is favorable. Sometimes, however, they are very obstinate. Where they are numerous or of large size, it is advisable not to undertake the removal of the whole mass at one time. Hemorrhage should be guarded against.

PAPILLOMA.—The true papilloma of the skin, of which Hardaway's† case may be taken as an example, is an inflammatory formation or tumor, variable as to size, made up of a growth very similar to that of the acuminated wart, or condyloma. It consists of a flat or raised, cauliflower excrescence, reddish or bluish in color, showing hypertrophy of the papillæ. Fissures and sinuses are apt to be present, which secrete a yellowish, puriform fluid. The course of the disease may be rapid or slow. It may appear upon any region of the body, and at any time of life. It is of a benign nature, and is not due to syphilis.

* Treatment of Skin Diseases, p. 56. London, 1877.

† Arch. of Derm., Oct. 1880.

Hardaway* considers the subject of papilloma from an etiological stand-point, stating that, however desirable it might be to retain the term for a substantive disease, this is not possible in the present state of our knowledge. One of the chief forms of the disease has been called "neuropathic papilloma," which is characterized by more or less pigmented papillary growths, limited to one side of the body, and following the distribution of the cutaneous nerves. Cases have been reported under the various titles of "verrucous nævus," "nævus papillaris," "nævus unius lateris," nerve nævus, "neuropathic papilloma," "papilloma neuroticum," and "ichthyosis hystrix congenita," by A. S. Thompson,† Bärensprung,‡ Th. Simon,§ Neumann,|| Gerhardt,¶ Mackenzie,** Crocker,†† Curtis,‡‡ and Hardaway. §§ Another variety of the disease is that called by Hardaway "symptomatic papilloma," characterized by papillary fungoid growths following upon various primary conditions, as syphilis, lupus, etc., unusual instances of which are described by Weil, |||| Roser, ¶¶ and Charpy.*** Hardaway ††† reports a case of "general idiopathic papilloma," apparently primary in character, marked by the eruption of variously sized and situated fungoid excrescences.

A peculiar form of disease may here be referred to, described by Kaposi, ††† which he terms "dermatitis papillaris capillitii." Hardaway designates it "local idiopathic papilloma," and records a case in a negro. It is characterized by pin-head sized discrete

* Arch. of Derm., Oct. 1880.

† Atlas of Delineations of Cutaneous Eruptions. London, 1829.

‡ Quoted by Neumann in his Lehrbuch der Hautkrankheiten, Wien, 1876.

§ Archiv für Derm. u. Syph., 1872.

|| Wiener Med. Presse, No. 51, 1877; also Arch. of Derm., Oct. 1878, p. 368.

¶ Jahrb. für Kinderheilk., 1870-71, N. F.

** Med. Times and Gaz., April 24, 1880.

†† Ibid., June 12, 1880.

‡‡ Arch. of Derm., July, 1880.

§§ Ibid., Oct. 1880.

|||| Das entzündliche Hautpapillom. Viertelj. für Derm. u. Syph., Heft 1, 1874.

¶¶ Das entzündliche Hautpapillom. Archiv der Heilkunde, 1866.

*** Annales de Derm. et de Syph., No. 1, 1872-73.

††† Loc. cit.

‡‡‡ Path. und Ther. der Hautkrankheiten. Wien, 1880.

or confluent papules, which pass into scar-like patches upon which the hairs appear bunched in the form of tufts, while in other places baldness exists. The hairs are extracted with difficulty or break off, and show a twisted, atrophic condition. The disease begins usually at the border of the scalp on the back of the neck, and extends itself over the occiput, where elevated, papillomatous, secreting and bleeding, crusted, offensive vegetations generally form. Kaposi considers the process to be an idiopathic inflammatory one, having no relation with syphilis.

ICHTHYOSIS.

Syn., Xeroderma; Xeroderma Ichthyoides; Ichthyosis Vera; Ichthyosis Congenita; Fish-skin Disease; *Germ.*, Fischschuppenausschlag; *Fr.*, Ichthyose.

ICHTHYOSIS IS A CONGENITAL, CHRONIC, HYPERTROPHIC DISEASE, USUALLY OCCUPYING THE WHOLE SURFACE, CHARACTERIZED BY DRYNESS, HARSHNESS, OR SCALINESS OF THE SKIN, AND A VARIABLE AMOUNT OF PAPILLARY GROWTH.

Symptoms.—Two varieties of the disease are encountered, named ichthyosis simplex and hystrix; they may occur independent of each other or, as not infrequently is the case, together. The disease varies exceedingly in the degree of its development. In one individual it amounts to but a slight inconvenience; in another it manifests itself in so pronounced a manner as to be the source of great discomfort and deformity.

ICHTHYOSIS SIMPLEX.—This is the variety usually met with. When simple dryness and harshness only of the skin exist, with more or less furfuraceous exfoliation, but without the formation of plate-like scales, the condition is termed XERODERMA. This is the mildest type of the affection. As ordinarily encountered, however, it consists of an altered state of the skin, characterized by a harsh, dry condition of the whole surface, accompanied by the production of variously sized and shaped, reticulated scales. These are either small, thin, and furfuraceous, like bran, or they are large and thick, resembling fish-scales, and are shaped after the normal lines and furrows of the part on which they exist. Upon the extremities they usually form diamond-shaped or polygonal plates, separated from one another by furrows or lines, which extend down to the

normal skin.* The amount of scaling present will depend upon the age of the patient, the severity of the disease, and the external treatment, as, for example, bathing, to which the skin has been subjected. If the scales be not removed from time to time, they tend to accumulate into laminae of considerable thickness. In color they are usually whitish, grayish, or yellowish, and often have a silvery or glistening look; in other cases they are of a yellowish olive-green; while more rarely they are dark olive-green or blackish. Even in those cases where the affection is but slightly developed, the skin usually possesses a dirty, yellowish tint, as though it had not been recently washed.

ICHTHYOSIS HYSTRIX.—This variety varies greatly as to the extent of its development; it may exist in the form of one or more localized patches, or as a diffused disease, involving the greater portion of the surface in an unevenly distributed manner. It is characterized by irregularly sized and shaped, ill-defined, rough, harsh, yellowish, brownish, or greenish patches, which are made up of enormously hypertrophied, more or less horny papillae. These patches, or areas of disease, may occur upon any part of the body. I have seen them upon the arms as solid, warty patches; upon the back in the form of elongated, linear patches; about the folds of the axillae, around the neck, around the umbilicus, and upon other regions. A number of regions are apt to be the seat of disease in the same patient; in other cases the growths appear upon, for example, an arm or the back only. They are usually very irregular in shape, adapting themselves in outline to the region upon which they exist. Sometimes they are seated over well-known nerve tracts. They may constitute roughened, corrugated, papillary growths, or they may result in uneven, horny, blunt or pointed, spinous, warty formations. In the latter case the elevations may reach several lines or more, and stand out from the skin like quills upon the back of a porcupine,—hence the name *hystrix*.† Like *ichthyosis simplex*, this variety varies

* This is well shown on the thigh in Plate F of my Atlas of Skin Diseases; also in Fox's Photographic Illustrations of Skin Diseases, Part II., representing a milder form of the disease.

† A portrait of an unusually developed case may be found in Hebra's Atlas of Skin Diseases, Lief III. Wien, 1859.

materially according to the age of the individual in whom it is seen; the older the patient the more highly developed will it usually be.

Ichthyosis simplex usually involves the whole surface, more or less generally, although it always manifests itself more markedly in certain regions; these are the lower extremities, from the hips down to the ankles, and the arms and forearms. The knees and elbows are in almost all cases the seat of considerable wrinkling, thickening, roughness, and scaliness. On the other hand, the flexures of the elbows and knees, as well as the axillæ and the groins, seldom show the disease. The difference between the outer surfaces of the joints and the flexures is generally striking. The scalp and face rarely exhibit the disease in a marked degree. The scalp and hair, however, are usually dry, and the latter is more or less harsh or brittle. The skin of the hands and feet is always dry and wrinkled, the natural lines of motion being deeply furrowed. The hands and feet are usually cold. The soles of the feet show marked epidermic thickening and sometimes callosities. The backs of the feet and ankles occasionally develop thick masses of scales, which assume the form of small polygonal plates, resembling somewhat both in appearance and in conformation the skin of the alligator. These epidermic plates are at times dark-greenish or blackish in color (ICHTHYOSIS NIGRICANS).

Ichthyosis is always worse in winter than in summer. In the majority of cases it is only at this season of the year that the affection gives rise to inconvenience. It usually disappears more or less completely during the spring and summer. Even those instances in which there is marked papillary hypertrophy are greatly influenced and modified by warm weather. Ichthyotic persons are noted to perspire but slightly. Sensible perspiration usually takes place only from certain localities, as the axillæ, face, palms, and soles. The increased activity of the sweat glands in summer, and the effect of this secretion upon the epidermis, produce the most beneficial results, often relieving the patient of his disease almost entirely for the time.

The course of the disease is essentially chronic. It continues throughout life, varying in its severity with the seasons. The subjective symptoms are of little importance. At times there is

slight itching, which usually comes on when the skin is exposed to the air, as when the clothing is removed at night.

Etiology.—The affection is to be regarded as one which is born with the individual; ordinarily, however, it does not manifest itself until after the first or second year of life. At first the disease is slight, but year by year it becomes more marked until adult age is reached, when it ceases to increase in intensity, and remains in this condition through life. It is hereditary in some cases, but not in all. Instances often present themselves in which one or the other parent is similarly affected; other cases, according to my experience, not infrequently occur in which neither parents nor grandparents are found to have any trace of the disease. One child only out of a large family may be affected; in other cases more than one may show signs of it. The parents of ichthyotic children are usually healthy and without constitutional vice. The subjects themselves of ichthyosis commonly enjoy the best of general health. The condition, then, is to be considered in the light of a simple deformity, similar from an etiological point of view to *nævi*, albinism, and other like structural defects. It occurs in both sexes, is common to all races, and is found in all spheres of society. According to the statistics of the American Dermatological Association, 36 cases only were encountered in 16,863 cases of skin disease; but the affection is commoner than these figures indicate.

Pathology.—The changes which exist in ichthyotic skin will be found to differ materially as one form or another of the disease is examined. Thus, slight ichthyosis—*xeroderma*—offers an altogether different picture from the severer type *hystrix*. The disease, however, may be said to consist in an excessive proliferation of the cells of the epidermis, together with more or less hypertrophy of the papillæ of the corium. In a section of ichthyosis of ordinary development the horny layer will be observed to be enormously increased in thickness, and to be dry and of a yellowish color; the mucous layer will also be seen to be augmented by new cells. The papillæ are longer than normal, and are infiltrated with cells; the vessels are also enlarged. Kohn* found, in a typical case of *ichthyosis hystrix*, that the disease began in the vascular layer of

* Archiv für Derm. und Syph., 1869, Heft 3, p. 418.

the corium. The papillæ were conically elongated, and widened about their bases, the enlargement taking place by means of a growth of new connective tissue. The mucous and horny layers were largely increased, and were found to be made up of a number of laminae.

Diagnosis.—The features of the disease are of so peculiar a character that but little difficulty is experienced in arriving at the diagnosis. The harsh, dry, wrinkled skin; the hypertrophic epidermis; the enlarged papillæ; the thin, yellowish scales; the deep furrows and lines, especially about the joints; the diffused distribution of the affection, and the regions particularly affected, all point to ichthyosis, and to this disease only. Added to these objective symptoms, the history, in the case of an adult, will aid in establishing the diagnosis. It will be distinguished from the inflammatory disorders which tend to terminate in desquamation, by the absence of any history of inflammation.

Treatment.—External treatment is alone found to be of service. Various internal remedies, including iron, arsenic, cod-liver oil, and iodide of potassium, have from time to time been employed, but without benefit. Local therapeutics, however, exert a favorable influence upon the affection, and, at the present day, constitute the method of coping with the disease. Of the several remedies used, water is to be mentioned first as being one of the most valuable, in the form of baths, either simple or medicated. Its action upon the skin is a mechanical one, macerating the accumulated masses of epithelial matter and exposing young layers of epidermis, which are found to be comparatively soft and pliable. The relief thus obtained is temporary, but nevertheless affords the patient ease and comfort for the time, and, when persevered in, may so modify the skin as to retard the hypertrophy. It may be stated, then, that, as a rule, the more frequently the ichthyotic patient bathes, and the longer he is able to remain in the water, the less will the deformity show itself. Vapor baths are particularly serviceable; also alkaline baths, containing from two to eight ounces of the bicarbonate of sodium to the bath. Some cases, however, do not improve under alkaline baths, when the treatment with soap, to be referred to, may often be instituted with better result.

Soap, more especially soft soap, is an invaluable remedy; it may

be used either in connection with the bath, or alone, as a diseutient. In severe cases, the following plan may be adopted. A sufficient quantity is to be rubbed into the skin twice daily, for four or six days, during which period the patient is to refrain from bathing. A bath is first to be taken four or five days after the last rubbing, when, in fact, the epidermis has begun to peel off; afterwards inunction with a simple ointment is to be applied, in order to prevent fissuring of the new skin. For this purpose oil of sweet almond, olive oil, benzoated simple ointment, glycerine, pure or diluted with water, and the petroleum ointments, will be found the most valuable substances.

I have found the following formula useful:

℞ Adipis Benz., ℥i;
Glycerinæ, ℥xl;
Ungt. Petrolei, ℥ss.

M. Ft. ungt.

Sig.—Apply daily after washing or bathing.

Iodide of potassium in the form of ointment is also of value. I have used it with benefit in some cases, in the strength of from five to ten grains to the ounce. Milton speaks favorably of the following:

℞ Potassii Iodidi, ℥i;
Olei Bubuli,
Adipis, āā ℥ss;
Glycerinæ, f℥i.

M. Ft. ungt.

In the treatment of the hystrix variety, in addition to the general plan just described, it will be necessary to employ caustic applications, or at times even the knife, for the purpose of removing the horny patches.

Prognosis.—This is unfavorable as regards permanent relief. Much, however, can be done to alleviate the condition by advice and appropriate external treatment; but experience teaches that here the value of therapeutics ceases. The deformity—for it is to be looked upon in this light—continues throughout life, its course changing but slightly, if at all, after adult age has been reached. The patient should always be made fully acquainted with the nature of the affection.

KERATOSIS PILARIS.

Syn., Lichen Pilaris; Pityriasis Pilaris.

KERATOSIS PILARIS IS AN HYPERTROPHIC AFFECTION, CHARACTERIZED BY THE FORMATION OF PIN-HEAD SIZED, CONICAL, EPIDERMIC ELEVATIONS SEATED ABOUT THE APERTURES OF THE HAIR-FOLLICLES.

Symptoms.—The disease consists essentially of an accumulation of epidermis about the apertures of the hair-follicles. The epithelial cells collect and heap up around the hairs, forming more or less conical elevations or papules. The lesions are pin-head in size, and are made up of epithelial structure and sebaceous matter, containing in their centre a convoluted or twisted hair. Each elevation is pierced by a hair, around which the accumulation of epidermis takes place concentrically, in the form of laminae. The hairs are either contained within the formation, and are not to be seen, or they protrude through the apex; frequently they are broken off short at the surface, and give the papule a dark central point. The elevations are whitish, grayish, or blackish in color, and are seated upon skin which is normally colored or slightly reddish. The skin is always dry, rough, scaly, and harsh, as in ichthyosis; passing the hand over the surface the elevations may be readily detected as minute, pointed asperities, feeling at times like a fine nutmeg grater.

The usual seat of the affection is the extremities, particularly the extensor surfaces. It is ordinarily encountered about the thighs, and upon the arms and forearms, but it is also met with on the trunk. It occurs for the most part in those who are in the habit of not bathing; I have, however, also observed it in those who used water freely. It varies in the extent of its development; often it is present as so slight a disorder as almost to escape notice. As a rule, it is unaccompanied by itching. Its course is chronic.

Diagnosis.—Keratosis pilaris is to be distinguished from cutis anserina (goose-flesh), which it may resemble, by the permanence of the lesions. In goose-flesh the disorder is acute, passing away with the exciting cause; as, for example, cold or nervous excitement. The affection may also be mistaken for the miliary papular syphiloderm in its desquamating stage, to which it not infrequently bears a close likeness. In the syphiloderm, however, the lesions

group, and are firmer, deeper seated, and less sealy. It is also to be diagnosed from *lichen serofulosus*, in which disease the papules are firmer and less sealy, and, moreover, incline to group.

Treatment.—The treatment consists of warm or vapor baths, with the free use of *sapo viridis*, or other strong soap; alkaline baths are also of service. In obstinate cases oily and fatty preparations, as, for example, glycerine, and the petroleum ointments, may be employed with benefit, as in *ichthyosis*.

SCLERODERMA.

Syn., Selerema; Seleriasis; Seleroma Adultorum; Selerostenosis; Cutis Tensa Chronica; Dermatosclerosis; Chorionitis; *Germ.*, Hautselerem; *Fr.*, Selérème des Adultes; Selérodermie.

SCLERODERMA IS AN ACUTE OR CHRONIC DISEASE, CHARACTERIZED BY A DIFFUSE, MORE OR LESS PIGMENTED, RIGID, STIFFENED, OR HARDENED HIDE-BOUND CONDITION OF THE SKIN.

The disease was first described by Alibert,* with the name of “selérémie des adultes.” Later, Thirial recorded two cases,† which may be regarded as typical of the affection. As further illustrative of scleroderma, in contradistinction to morphea, I would refer to the cases of Henke,‡ Bouehut,§ Rilliet,|| Gillette,¶ Forget,** O'Donnell,†† Fagge,‡‡ Kaposi,§§ Piffard,||| Van

* *Nosologie Naturelle*, tome i. p. 498. Paris, 1817.

† *Du Selérème chez les Adultes*. *Gaz. Méd. de Paris*, 1845, p. 523. From *Jour. de Méd.* See also *L'Union Médicale*, 1847, p. 422.

‡ *Handbuch zur Erkenntniss und Heilung der Kinderkrankheiten*, 1809.

§ *Gaz. Méd. de Paris*, 1847, p. 771.

|| *Rev. Méd.-Chir.*, 1848, p. 79; also *Traité Clin. et Prat. des Maladies des Enfants*. Rilliet et Barthez, vol. ii. p. 107, 1861.

¶ *Du Selérème Simple*. *Arch. Gén. de Méd.*, 1854, p. 657.

** *Gaz. de Strasbourg*, No. 6, 1847; also *Schmidt's Jahrb.*, lvi., pp. 184, 185.

†† *Dublin Hosp. Gaz.*, 1855, vol. ii. p. 6; *ibid.*, 1856, vol. iii. p. 296.

‡‡ *Guy's Hospital Reports*, 3d Ser., vol. xv., 1870, pp. 298, 299. Two cases are here reported, the second of which, A. D., a woman aged sixty-three, I had through the courtesy of Dr. Fagge the good fortune to see. The peculiarity in this case was the existence in front of each elbow of hard, sear-like, pigmented bands of papillary hypertrophy resembling *ichthyosis hystrix*. Similar patches existed on the nape of the neck and in the axillæ.

§§ Case of Katarina Schira. *Diseases of the Skin*, Hebra and Kaposi. *New Syd. Soc. Trans.*, London, 1874.

||| Case of David G. *Diseases of the Skin*, p. 366. New York, 1876.

Harlingen,* White,† Crocker,‡ and Madar.§ These all show similar symptoms, and manifestly represent the same process. Of the more recent cases, that reported by Dr. Van Harlingen (which was also under my observation) may be taken as a typical example of the disease, which may be described as follows. It begins by a more or less pronounced stiffening or hardening of the integument, which increases in intensity rapidly or gradually until the part invaded becomes in most cases markedly sclerosed. As a rule, the process manifests itself unknown to the patient, without constitutional disturbance, heat, pain, swelling, or apparent alteration in the skin, the first symptom noted being a feeling of stiffness or rigidity of the integument. In other cases it is preceded by chills, fever, œdema, and a sense of numbness or tingling in the part. At other times pigmentation is the first symptom observed. The completion of the process may take place in the course of a few weeks or not until months or years have elapsed.

When it is typically developed, the skin is stiff, rigid, tight, or immovable, and firm or even hard to the touch, imparting the sensation of being frozen but without the feeling of cold. It may also be brawny or leathery, or in more marked cases may seem as though wooden or petrified. The skin is bound to the tissues beneath, has a hide-bound feel, and is incapable of being made to glide over the structures beneath. It cannot be pinched up into folds. Sometimes the skin and subcutaneous connective tissue are not only firmly adherent but are bound to the fasciæ, muscles, and bones. The skin, moreover, has a set, fixed, immobile look, owing to the disappearance of the wrinkles and natural lines of the part. Middle-aged or elderly persons are thus not infrequently made to appear younger.

The infiltration passes insensibly into the healthy skin, being neither circumscribed nor defined by a line of demarcation. It is diffuse, generally occupying a considerable area of surface, as, for example, the neck and cheek or back; in other cases the arms. Not infrequently it is more or less general. It may also spread

* Amer. Jour. of Syph. and Derm., Oct. 1873.

† Cases I. and II. Arch. of Derm., July, 1875.

‡ Brit. Med. Jour., Dec. 21, 1878.

§ Viertelj. für Derm. u. Syph., Heft 2, 1878.

out in the form of small or large, irregularly-shaped, ill-defined patches, or it may, more rarely, show itself in the form of narrow or broad bands, as, for example, down the limbs or across the mamma, in which event the process resembles morphea. It is in these cases that the line separating the two diseases becomes ill defined, morphea seeming to be superadded to scleroderma. The affected surface, as a rule, is neither elevated above the level of the surrounding skin nor depressed below it; exceptions to this statement would be found in the case of œdema, or of band-like formations, and in the later atrophic stages of the disease. The surface, moreover, is generally even and smooth, shining or velvety; but at times it shows a dry, more or less desquamating, shrivelled epidermis; in other instances, usually in connection with localized areas which may occur here and there, slight or extensive papillary hypertrophy, resembling ichthyosis, may be present. Pigmentation generally exists, which may be yellowish or brownish, in the form either of a discoloration or of irregularly shaped and sized spots and patches, giving a mottled or speckled appearance. Sometimes the skin is paler than normal, from tension, and has a stretched, whitish or yellowish, waxy look. The temperature is either normal or slightly diminished. The subjective symptoms are not constant. Occasionally there is numbness, pain, tingling, or itching, while at times deep-seated neuralgic or cramp-like pains, especially in the limbs, are complained of. In all cases there is a feeling of contraction of the skin, of its being tight or stretched or too short.

The disease may attack any region; but it is most frequently encountered about the neck, where it often begins, shoulders, back, chest, arms, and face. It may be universal, as in Schwimmer's case.* Occurring over the face, the countenance becomes changed and assumes an expressionless, immobile, fixed, inanimate, staring, grinning, or anxious look. Attacking the hands, the fingers become semi-flexed, rigid, and immovable. Thus the patient may be rendered helpless. The disease is usually symmetrical. Both sides of the trunk, and both extremities, are generally invaded, though not always in precisely the same region. The invasion may be sudden or gradual, the latter being the more usual course.

* Abstract in Lond. Med. Record, March 15, 1880.

The evolution of the disease is variable. It may be acute, as in the cases of Piffard and Crocker, or, as is the rule, chronic. Weeks or months may elapse before the sclerosis reaches its height, when the condition may remain in this state for months or years or may shortly undergo spontaneous involution, this change taking place usually very gradually, leaving the skin normal. On the other hand, atrophic symptoms may succeed the sclerosis, characterized by a shrinking or contraction with condensation of the tissues, with loss of subcutaneous fat, the integument seeming to be bound to the bones. Over the joints the skin may become so fixed and immobile that excoriations and ulcers may result. About the face, too, the integument may become so bound that motion may be interfered with; and in one case reported by Dr. Fagge the disease was so pronounced about the jaws and mouth that the patient succumbed from exhaustion and starvation through inability to eat.

The general health, as a rule, is good, being unaffected by the disease. In some cases rheumatism and neuralgic pains have been noted. Difficulty in respiration, from the bound, contracted state of the integument over the thorax, has also in some instances existed. The sudoriparous and sebaceous glands are usually unaffected, except where the sclerosis is very marked, when it may be diminished. Other cutaneous diseases may appear upon sclerodermic skin, as, for example, erysipelas, eczema, herpes zoster, variola, and acne. Patches and other less pronounced manifestations of morphea may accompany the disease, as in the case of Mrs. M., reported by Hutchinson,* and in that of Elizabeth Nicholls,† recorded by Fagge; and indeed the coexistence of certain symptoms common to either affection is not rare. In the case of Elizabeth Nicholls true keloid was also present and added to the complication.

Etiology.—The cause of the disease is exceedingly obscure. An examination of the recorded cases throws but little light on the subject. It may occur at any period of life, but is of most frequent occurrence in early adult and middle age. It is met with far oftener in women than in men. In an analysis of twenty-eight

* Lectures on Clinical Surgery, vol. i., Part II., p. 340. London, 1879.

† Guy's Hospital Reports, 1867; also Catalogue of New Syd. Soc., Atlas of Skin Diseases, Part II., London, 1875, reported by Mr. Hutchinson.

cases, Van Harlingen cites twenty females and only eight males. Rheumatism, especially of the joints, has been noted to precede the attack in many cases. Exposure to wet and to cold, or sudden changes of temperature, have even oftener been referred to as the exciting cause. Violent impressions on the nervous system have also been spoken of. The general health, as stated, is usually good, and often remains so throughout the course of the disease. In cases where death has occurred it has been from some inter-current malady. The disease is exceedingly rare.* The statistics of the American Dermatological Association record but two cases among 16,863 cases of skin disease. My own experience is limited to a few cases.

Pathology.—Concerning the nature of the disease, its place in classification, and its relations to other diseases, especially morphœa, much has been written, but the views of authors differ to such an extent that at present little can be positively stated. By many dermatologists scleroderma and morphœa are regarded as merely different manifestations of the same disease, a conclusion which was first arrived at by Fagge in 1867 in an able analytical article, and which has been adopted by others in England, in Germany, and in this country. The fact that the two diseases are very closely allied in their nature, as well as in the form of some of their cutaneous manifestations; that certain of the symptoms usually present are common to both affections; and, finally, that these manifestations may occur, either simultaneously or at different periods in the course of the disease, upon the same patient, admits of no question. The difficulty of deciding upon the difference or the identity of the two forms of disease arises from the fact that both are capable of assuming a variety of forms, and that these forms present entirely different clinical features as they are seen at one or another stage. This is particularly true of the process I have described as morphœa; and it is chiefly for this reason that for the present I deem it advisable to consider them separately. Very rarely marked expressions of both forms of

* Cases have also been reported by Arnold, *Amer. Jour. of the Med. Sci.*, July, 1869; Day, *Amer. Jour. of the Med. Sci.*, April, 1870; Piffard, *New York Med. Gaz.*, June 24, 1871; Van Harlingen (with a bibliography), *Amer. Jour. of Syph. and Derm.*, Oct. 1873; and White, *Arch. of Derm.*, July, 1875.

disease are encountered on the same subject, as has been already stated, but, as a rule, we meet with one or the other. More frequently it is morphea, though not in the restricted sense which has been given the name by some writers. I have seen but few well-marked examples of scleroderma, but as many as twelve or fifteen cases of morphea, in none of which did there exist the symptoms which I have described as characteristic of scleroderma. It is therefore evident that a name should be given to represent these important changes in the skin which differ in so many symptoms from typical scleroderma.* The anatomy of scleroderma has been studied by Förster,† Auspitz,‡ Arning,§ Neumann,|| Fagge,¶ Kaposi,** Chiari,†† and others, with somewhat varying results, doubtless due to the fact that the cases represented different stages of the disease. Sections have been taken from the living subject as well as from the cadaver. It is noteworthy that, notwithstanding the marked clinical features of the disease, but little deviation from healthy integument has been demonstrated. The following, however, will represent the changes usually found. The epidermis remains unaltered in structure, but contains a deposit of pigment in the lower layers of the rete and in the papillary layer of the corium. The papillæ are normal in size, except where manifest papillary hypertrophy exists, as, for example, in the case of roughened bands or patches. Both the corium and the subcutaneous tissue are the seat of the disease. They are found to be thickened, and to contain a marked increase of the connective tissue with condensation and elastic fibres. In the subcutaneous tissue the fat cells are scanty, and are surrounded by dense bundles of connective tissue. The whole cutaneous tissue is thus con-

* Fagge and others have proposed to designate both forms of disease as scleroderma, and that two varieties, namely, "diffused" and "circumscribed," be made. The objection to this nomenclature would be that morphea is, as I have shown, far from being in all cases circumscribed.

† Würzburger Med. Zeitschr., 1861, Bd. ii. p. 294.

‡ Wiener Med. Wochenschr., 1863; quoted in Neumann's work, 3d edit. (German), p. 354.

§ Würzburger Med. Zeitschr., 1861, vol. ii. p. 186.

|| Loe. cit., 3d edit. (German), p. 354.

¶ Lond. Path. Soc. Trans., 1871.

** Loe. cit., vol. iii. p. 119.

†† Viertelj. für Derm. und Syph., Heft 2, 1878.

verted into a compact mass, made up of densely-packed fibres more or less interlaced and bound together. Concerning the vessels, Kaposi states that he found them "diminished in calibre, and closely surrounded by connective tissue. In spots here and there, and in large tracts, the connective tissue surrounding both sides of a vessel appeared pushed aside from its walls by small, nucleated (lymph) cells closely heaped on one another. By these cell-masses the vessel was increased to five or six times its normal breadth, as if enclosed in a cell-sheath." The same observer has expressed the view that the disease is due to a thickening and stasis of lymph, in consequence of an abnormal state of the nutritive processes, the stagnation occurring in the lymph spaces. Chiari in an examination of a marked case found the spinal cord and ganglia healthy. The sweat and sebaceous glands and the smooth muscular tissue are said to remain normal. Madar* is of the opinion that the disease is a central trophoneurosis. For the present it may, I think, be regarded primarily as a form of hypertrophy, due probably to some obscure nervous disturbance, followed sooner or later by resolution or by more or less atrophy.

Diagnosis.—Bearing in mind the peculiar characters of the disease, which are in most cases well marked, no difficulty should be experienced in determining the diagnosis. The solidified, rigid, hard, more or less pigmented condition of the integument, in its early stages, apparently unaltered in structure, will alone be sufficient to distinguish it from other diseases. From morphea, to which, as already stated, it is closely allied, both in nature and in some of its clinical features, it may be distinguished by the following points. Scleroderma is disposed to involve large areas of surface, either in the beginning or during its course, as, for example, the greater portion of the trunk; morphea usually appears as one or more small areas, often not larger than coins. Scleroderma is always diffused or spread out, and is unattended by any line of demarcation; it may be universal. Morphea, when in patches, is circumscribed and surrounded by a sharp line of demarcation and a pinkish or lilac border fading into the healthy skin. Scleroderma is always characterized by a variable degree of stiffness or hardness and rigidity; morphea is usually soft or firm, but is

* Viertelj. für Derm. und Syph., Heft 2, 1878.

seldom hard. In scleroderma the skin in many cases does not appear altered in structure, usually resembling stiffened or frozen normal integument; in morphœa there is always perceptible and generally marked change in the structure of the skin. In scleroderma the disease begins by a simple stiffening or hardening of the integument; in morphœa it begins by the formation of a more or less distinct hyperæmic, reddish, or violaceous soft patch, which only later assumes the more characteristic appearance. Scleroderma generally manifests itself insidiously and without subjective symptoms; morphœa is often accompanied by pain or tingling. Scleroderma is generally more or less symmetrical; it seldom appears over definite nerve tracts; morphœa is usually asymmetrical, and is often met with over nerve tracts. Scleroderma does not show the enlarged, superficial, bluish bloodvessels or the striae atrophicæ of morphœa. Scleroderma often manifests itself acutely; morphœa is usually slow in its development, months and years being sometimes occupied in the formation of the lesions.

Treatment.—Various plans of treatment have in different cases been instituted, under some of which the patients have improved, but it was doubtful whether the cure was to be attributed to the remedies or to the spontaneous involution of the process. Constitutional remedies, such as arsenic, quinine, and cod-liver oil, together with the employment of inunctions, baths, massage, and stimulating frictions, in the form of liniments and ointments, as, for example, mercurial ointment, offer the most hope. The constant electric current, as recommended by Fieber* and Piffard,† may also be employed with the expectation of benefit. Armaingaud‡ and Schwimmer§ also report cases improved by the galvanic current.

Prognosis.—The course and termination of the disease will be found to vary. The prognosis should be guarded. Not infrequently the condition undergoes involution to recovery, while in other instances the symptoms remain persistently throughout life. Contraction and immobility of the parts may occur, attended by more or less deformity and suffering.

* Wiener Med. Wochenschr., Nov. 26, 1870.

† Loc. cit.

‡ Sur un cas de sclérodémie, etc. Paris, 1878.

§ Pest. Med.-Chir. Presse, No. 23, 1879. Abstract in Lond. Med. Record, March 15, 1880.

MORPHŒA.

Symptoms.—The disease,* formerly known as the “keloid of Addison,” is characterized by a variety of lesions which incline to undergo important changes in the course of their evolution. It is only by familiarity with these numerous phases of the disease that an idea of the whole process can be obtained. It may appear in one of several ways. Frequently it begins by the development of one, two, or more isolated, round, ovalish, or irregularly rounded or elongate, pinkish or purplish, hyperæmic patches, the size of a small or large coin. They soon become well defined and circumscribed, and surrounded by a faint or distinct pinkish, violet, or lilac border or areola, several lines in width, made up of very minute capillaries.

The patch in its early stage may be slightly puffed or elevated, but as generally seen in a later stage it is on a level with the surrounding skin, or, still later, even slightly depressed. When fully developed, it is usually firm to the touch, but not hard, while, on the other hand, not infrequently it is soft and feels but little different from the neighboring healthy skin. In other cases it has a somewhat tough, leathery, or brawny feel, and can only with difficulty be pinched up between the fingers. The sensibility at this stage generally remains unimpaired. The surface is usually smooth and shining, and sometimes has a polished, ivory look; in other cases, where the lesion is old, it is covered with more or less scanty, dry, adherent, shrivelled epidermis. In color the patch is pale-pinkish or violaceous, light-yellowish, or even whitish, and waxy, resembling in these cases a section of bacon which has been cut and laid into the skin, giving it a lardaceous appearance. In some cases it has an ivory look. In the early stage minute plexuses of bloodvessels may sometimes be detected ramifying over the surface. Around the patches there is almost always more or less yellowish or brownish mottled pigmentation of a diffuse character.

* I include under the term morphœa two forms of disease heretofore considered by writers under the names “keloid of Addison” and “morphœa,” believing that they are but different manifestations of the same process. The so-called “morphœa of leprosy,” although sometimes resembling the disease under consideration, is but one of the many cutaneous symptoms of that disease, and is in no way connected with the affection about to be described.

The lesions manifest themselves upon various regions, showing preference for the face, neck, chest, mammæ, back, abdomen, arms, and thighs. They exhibit no disposition to symmetry. They are not infrequently encountered along nerve tracts, as, for example, over the distribution of the fifth pair. The secretion of sweat is diminished or absent, according to the extent of the atrophic changes in the lesions.

Their course is variable, though almost always chronic. They usually appear insidiously, or, as sometimes happens, are preceded by pain or tingling, and increase in size slowly and gradually until they become as large as a silver coin or even as large as a hand. Occasionally two neighboring patches will coalesce. As a rule, they are not accompanied by marked subjective symptoms, but sometimes itching and tingling or numbness, in other cases pain, are present.

Having reached their definite proportions, they either remain in this state for months or years or begin at once to undergo spontaneous involution, which sometimes takes place with rapidity, leaving the integument healthy. In other cases they tend to undergo atrophic changes, the skin becoming contracted, thin, parchment-like, or shrivelled, and, later, bound to the tissues beneath, forming large or small, rounded or elongate cicatriform lesions, causing contraction and disfigurement. The subcutaneous and even muscular tissues may become wasted and shrunken, giving rise to deformity and, in the case of a limb, to loss of power.

In place of the macules, or patches, just described, the disease may manifest itself by lesions of a more distinctly atrophic character, consisting of aggregated or disseminated, small, funnel-shaped or pit-like depressions in the skin, resembling the scars of *acne atrophica*; reddish, bluish, or purplish, more or less tortuous, short or long, dilated bloodvessels; and whitish, pearly, smooth, glazed, slightly depressed macules and grooved streaks (*maculæ et striæ atrophicæ*). Here and there, either alone or in connection with these features, variously sized, reddish or purplish, telangiectatic, more or less slightly pigmented, diffuse, soft, normal-feeling patches, surrounded by yellowish or brownish pigmentation, may develop, which may sooner or later undergo spontaneous involution, or, on the other hand, may pass into the further advanced characteristic, circumscribed, yellowish, lardaceous-looking or alabaster-like lesions.

It will thus be seen that the process is an exceedingly complex and an unusually variable one, characterized by a variety of lesions, all or only some of which may be present in a given case. As a complication, true keloid (the keloid of Alibert) may also be present, as in the rare case of Elizabeth Nicholls and in one reported by Mr. Hutchinson.*

Its course is chronic, but it inclines, except in the severer forms, to recovery. Years may elapse in some cases before decided changes occur, while in some instances it increases in severity from year to year, ending in great deformity. The disease is rare, but not so rare as scleroderma.† The statistics of the American Dermatological Association record but a single case among 16,863 cases of skin disease. But it is commoner than these figures imply.

As typical examples of the disease, I would refer to the cases of Addison,‡ Wilson,§ Bulkley,|| Morrow,¶ Gibney,** Graham,†† Robinson,‡‡ and Abbe.§§ Well-marked examples are also recorded by Hutchinson.||||

Etiology.—Nothing positive is known of the cause of the disease, although, as in scleroderma, the nervous system is doubtless the primary seat of disorder. In corroboration of this statement the simultaneous occurrence of markedly neurotic diseases, as canities and alopecia areata, may be referred to. It occurs far more frequently in women than in men. Of the numerous cases that I have seen, almost all have occurred in females. It is encountered in the strong as well as in the weakly, and at all ages.

* Loc. cit., p. 329.

† See Scleroderma.

‡ A Collection of the Published Writings of the late Thomas Addison. New Syd. Soc., London, 1869. Cases III. (E. W.) and IV. (L. B.). See also an account of these cases in Fagge's article on the keloid of Addison, Guy's Hospital Reports, 1867.

§ Diseases of the Skin, London, 1867, p. 675; see also an article in the Jour. of Cut. Med., vol. ii. No. 6.

|| Arch. of Derm., Jan. 1877. Case I. (B. M.); Case II. (Ann B.). Also Arch. of Derm., Jan. 1879 (Case of Bessie Lindsey), and April, 1880.

¶ Ibid., April, 1879. Case of Mary Marshall.

** Ibid. Case of Alice Dowling.

†† Ibid., April, 1880. This case was also under my observation, and is the counterpart of several other cases under my care.

‡‡ Arch. of Derm., April, 1880.

§§ Ibid.

|||| On Morphœa. Lectures on Clinical Surgery, vol. i., Part II. London, 1879.

Pathology.—The pathology of the disease is obscure. Concerning the relations of morphœa to scleroderma, the reader is referred to the chapter on the latter disease. For the present it may be stated that these two forms of disease, while closely related both in their symptomatology and in their pathology, are worthy of being distinguished and considered separately. Wilson,* Hutchinson,† and Crocker‡ have called attention to the not infrequent occurrence of the disease over the course of known nerve tracts; but, while this observation is true of certain cases, many examples might be cited where such is not the case. Hutchinson in particular insists upon its neurotic origin, a view which is, in my opinion, not invalidated by the appearance of the lesions remote from the course of large nerves. I entirely agree with those who hold the nervous system at fault, and have for some time regarded the disease as a trophoneurosis.

The pathological anatomy of the characteristic patches, or plaques, of morphœa varies considerably with the stage in which the disease is examined. In a soft, pliable, whitish patch, of some months' duration, taken from the back, the most marked alteration that I could discover was a condensation of the connective tissue of the corium, with a shrinkage of the papillary layer.

Crocker examined whitish patches in their early stage, and reports partial disintegration in the deeper layers of the epidermis; atrophy of the papillary layer; thrombosis of the longitudinal vessels in the superficial plexus; and abundant cell infiltration around the sebaceous glands, hair-follicles, and vessels. In the later stages he notes the development of these cells into fibrillar tissue; its contraction, and the consequent obliteration of blood-vessels, and atrophy of the sebaceous and sweat glands.

Diagnosis.—The relationship between the conditions designated in literature by the names morphœa, keloid of Addison, scleroderma, and *striae et maculae atrophicæ*, is variously interpreted by observers. The following points of difference may be mentioned. Morphœa differs from scleroderma in that its lesions are more or less circumscribed; this is particularly the case in the macular form of the disease, where the patches exist as well-defined, cir-

* Loc. cit.

† Loc. cit.

‡ Lancet, Nov. 22, 1879. The case reported showed the lesions strikingly distributed along the track of nerves on the arm and forearm.

circumscribed, yellowish, fatty-looking, soft or firm patches. It also differs from scleroderma in the absence of the peculiar sclerodermic hardness. In the later stages of morphea, where distinct atrophy and cicatrization have occurred, the condition will scarcely be confounded with scleroderma. Other symptoms of a different nature, as, for example, pigmentation and cicatrization, will usually be present in the later stages of morphea, whereby the conditions may be separated. (See Scleroderma.) The atrophic striæ of morphea, as seen in one form of the affection, are with difficulty to be distinguished from the lineæ albicantes so often seen upon the abdomen.

The roundish, circumscribed patches of morphea bear a strong resemblance to the anæsthetic spots of leprosy. In general appearance these two forms of disease possess many features in common; and it is probable that they are both due to the same cause, namely, perverted innervation, the nerves being, as is well known, markedly involved in leprosy, while in morphea the existence of some trophoneurosis is more than likely. The reddish or yellowish patches or macules of leprosy are well-known symptoms common to both the tubercular and the anæsthetic variety of the disease. When fully developed, they are always anæsthetic, and are usually accompanied by other symptoms of leprosy.

The whitish patches of morphea bear some likeness to vitiligo; but in vitiligo the disease is one affecting the pigmentary layer only, the texture of the skin itself being in every respect normal, and hence could not be confounded with the structural change in the skin which takes place in morphea.

Treatment.—A general tonic treatment is called for, consisting of the liberal use of cod-liver oil, the preparations of iron, and especially arsenic. The last-named remedy, continued for a long period, possesses, I think, positive value. More benefit probably is to be derived from its judicious use than from any other remedy. Where it is to be used for months it is of importance to begin with small doses, gradually increasing the quantity until the patient takes as much as possible without disturbing the general health. The constant galvanic current may also prove of service, and is worthy of an extended trial. I have seen cases where it seemed to benefit the patient decidedly.

Prognosis.—It is a chronic form of disease, undergoing very slow and gradual evolution, and may continue throughout life. Sometimes, however, it runs a comparatively short course, comprising months rather than years. In mild forms it inclines sooner or later to spontaneous recovery, and in some cases this occurs most unexpectedly. Where extensive atrophy has already taken place, complete restoration cannot be looked for.

As closely allied to morphœa or as a variety of this disease, I would also include many, if not all, of the cases of the disease known in literature as *HEMIATROPHIA FACIALIS*, or *UNILATERAL ATROPHY OF THE FACE*. The disease here consists in a variable degree of atrophy of a portion or of the whole of one side of the face, involving the skin, subcutaneous connective tissue, and deeper structures, including in some cases the bones. The origin of the disease is of course deeper-seated than in morphœa. The changes which take place in the skin are in my opinion of the same nature as those which occur in the characteristic lesions of morphœa met with in other regions. The disease has been observed with marked morphœa upon other regions, as in Gibney's case.* In the several cases which I have seen I have not been able to detect any essential difference. The neurotic origin here is manifest, so evident, indeed, that this form of the disease has received attention chiefly at the hands of neurologists. Among those who have written on the subject, Parry,† Romberg,‡ Moore,§ Lande,|| Eulenburg,¶ Fremy,** Hammond,†† Bannister,‡‡ and Robinson§§ may be mentioned.

* Loc. cit.

† Quoted by Romberg in *Lehrb. der Nervenkr. des Menschen*. Berlin, 1854.

‡ *Trophoneurosis Facialis, Klinische Wahrnehmungen und Beobachtungen*. Berlin, 1851.

§ Unilateral atrophy of the face. *Dublin Quar. Jour. of Med. Sci.*, 1852.

|| *Essai sur l'aplusie lamineuse progressive*. Paris, 1868.

¶ *Lehrbuch der functionellen Nervenkrankheiten*. Berlin, 1871.

** *Étude critique de la trophonévrose faciale*. Paris, 1872.

†† *Progressive Facial Atrophy. A Treatise on Diseases of the Nervous System*, 6th ed., New York, 1876. Also *Journal of Nervous and Mental Diseases*, April, 1880.

‡‡ *Progressive Facial Hemiatrophy*. *Ibid.*, Oct. 1876.

§§ A case of unilateral atrophy of the face, etc. *Amer. Jour. of the Med. Sci.*, Oct. 1878.

SCLEREMA NEONATORUM.

Syn., Scleroderma Neonatorum; Induratio Telæ Cellulosæ Neonatorum; Algor Progressivus; Sclerema of the Newborn; *Germ.*, Das Sclerem der Neugeborenen; Zellgewebsverhärtung der Neugeborenen; Die Greisenhaftigkeit der Kinder; *Fr.*, Algidité Progressive; Décrépitude Infantile.

SCLEREMA NEONATORUM IS A DISEASE OF INFANCY, APPEARING USUALLY AT BIRTH, CONSISTING OF A DIFFUSED STIFFNESS AND HARDNESS OF THE CUTANEOUS AND SUBCUTANEOUS TISSUES, ACCOMPANIED BY COLDNESS, ŒDEMA, SWELLING, DISCOLORATION, LIVIDITY, AND GENERAL CIRCULATORY DISTURBANCE.

Symptoms.—The disease may be congenital or may appear during early infancy. It usually begins in the lower extremities, and extends upwards, involving the trunk, arms, and face. The skin frequently assumes a glossy, reddish, or purplish hue; in other cases it is yellowish, or even brownish. A mottled aspect, more or less marked, may be present. The integument appears stretched and tense. To the touch it offers a remarkable and striking induration, being firm, hard, rigid, and incapable of being taken up between the fingers. The amount of hardness varies in places, but is generally most marked about the legs. The surface is cold, especially about the extremities. Upon pressure there is more or less œdema, together with an infiltrated, thickened condition of the tissues. On account of the rigidity of the parts, motion is interfered with. When the disease is generalized, the skin possesses a resemblance to that of a half-frozen corpse, as regards both its appearance and its feel. The child is unable to move, takes but little nourishment, respire feebly, and usually sinks and dies in a few days. Very rarely, spontaneous recovery takes place. The disease is usually found associated with pneumonia or other affections of the respiratory system, or with diseases of the circulatory system.

Etiology.—The causes are unusually obscure. It has been observed to occur most frequently in premature children. The capillary circulation is manifestly at fault; but whether this is the primary difficulty, or is secondary and dependent upon the structural change in the tissues, remains undetermined.

Pathology.—After death the skin is observed to undergo but little change; the coloring of the skin usually becomes more in-

tense. The induration remains. Upon incision, a large quantity of yellowish, serous fluid is poured forth, after which the structures become softer and resemble ordinary œdematous tissue. The subcutaneous tissue is noted to contain a firm, stearine-like deposit. Microscopic examinations have been made by Virchow,* Förster,† Löschner,‡ Jenks,§ and others, with somewhat unsatisfactory results. Considerable œdematous infiltration exists throughout the tissues. The connective tissue of the corium is greatly increased, according to Löschner and Jenks; other observers, however, have not been able to determine this point. The stearine-like deposit is noted to occupy a large tract in the subcutaneous layers.

Diagnosis.—The features of the disease are so well marked as to cause no difficulty in its recognition. The induration, œdema, and peculiar color of the skin, the coldness of the surface, the impaired circulation and respiration, all point unmistakably to this disease. It differs from the scleroderma of adults in the nature of the cutaneous deposit, as well as in its history and its course.

Treatment.—This should be directed against the general condition. Cutaneous stimulation, gentle frictions, warmth, and other like measures are to be resorted to and persevered in. The prognosis is very unfavorable.

ELEPHANTIASIS.

Syn., Elephantiasis Arabum; Pachydermia; Buenemia Tropica; Morbus Elephas; Elephant Leg; Barbadoes Leg; Spargosis.

ELEPHANTIASIS IS A CHRONIC, HYPERTROPHIC DISEASE OF THE SKIN AND SUBCUTANEOUS CONNECTIVE TISSUE, CHARACTERIZED BY ENLARGEMENT AND DEFORMITY OF THE PART AFFECTED, ACCOMPANIED BY LYMPHANGITIS, SWELLING, ŒDEMA, THICKENING, INDURATION, PIGMENTATION, AND PAPILLARY GROWTH.

Symptoms.—The affection usually begins by an inflammation of an erysipelatous nature, attended by general febrile symptoms, pain, heat, lymphangitis, swelling, œdema, and sometimes discharge, followed by slight permanent enlargement of the part.

* Die Krankhaften Geschwülste, Bd. i. p. 302.

† Path. Anat., Bd. ii. p. 1070, Zweite Auflage. Leipzig, 1863.

‡ Prager Viertelj., 1868.

§ Amer. Jour. of Obst., May, 1871, p. 129.

Attacks of this description recur from time to time, the limb or region involved being, as a rule, slightly increased in size upon each occasion. After a year or longer, during which period a number of attacks will probably have taken place, the part will in most cases be seen to have attained considerable size, to be chronically swollen and œdematous, and to be quite hard; and not only the leg but the skin itself to be generally hypertrophied, as shown by induration, enlarged and prominent papillæ, fissures, and more or less discoloration and pigmentation. The process rarely ceases until the part has enlarged to such an extent as to be attended by deformity.

The disease appears somewhat differently as one part or another of the body is affected. The common seat of the disease is the lower extremities, especially the legs. One limb only, however, is ordinarily attacked, the disease seldom showing itself symmetrically. The genitalia are the regions next attacked in point of frequency, the penis, scrotum, labia, and clitoris being all liable to invasion. Other regions are more rarely assailed, although cases are recorded in which the face, arms, and breasts have been involved.

The leg being the usual seat of the disease, a description of the appearances as ordinarily seen here may be given. After the affection has existed for some time, and as observed in a quiescent state between the inflammatory attacks, the leg will usually appear hypertrophied, the enlargement beginning generally below the knee and extending down to the ankle, the foot being more rarely involved. The limb is swollen, the tissues pitting upon pressure and exhibiting signs of general thickening and induration, and is usually considerably deformed. The skin is hypertrophied in all its parts. It may be either smooth or rough; when smooth, eczema is not infrequently present, and is a complication. Papillary hypertrophy, in the form of wart-like prominences, is apt to develop, especially over the region of the foot and the toes. Fissures are also met with, while the normal lines and folds of the surface are all exaggerated. Maceration of the epidermis, together with accumulation of extraneous matter, generally occurs about these folds, giving rise to offensive masses of decomposition. Scales and crusts are generally present, the latter being formed by the discharge, together with the blood and sebaceous matter,

which oozes from between the warty formations. Ulcers are at times developed from varicose veins which may exist. More or less discoloration and pigmentation, giving the limb a reddish or brownish aspect, also take place. The amount of pain attending the disease varies; at times it is violent, especially during the inflammatory attacks, while in other cases but little discomfort is experienced. The weight of an affected part, as a limb or the scrotum, is always appreciable, and may be so great as to incapacitate the individual from walking. Where there is a tendency to eczema, itching may be an annoying symptom. The course of the affection is emphatically chronic.

Etiology.—Elephantiasis is found in all parts of the world, but is of much more frequent occurrence in some countries than in others. It is endemic and especially common in tropical climates; Barbadoes, and the other islands of the West Indies, South America, India, the Malayan Peninsula, China, Japan, Egypt, Arabia, and Africa may be mentioned as affording by far the greatest number of cases. Instances are also encountered throughout Europe and our own country, irrespective of latitude or place. The disease where endemic occurs chiefly in low, malarial districts, upon islands, and along the sea-coast. Climatic conditions, it would appear from this statement, must be held accountable for a certain amount of influence in its development. It is, however, not improbable that the want of proper hygienic measures, depraved habits, and bad food also play a prominent part in the production of the disease, for the vitiated condition of the inhabitants of tropical countries is well known. It is due to inflammation and obstruction of the lymphatics, although the cause of the disturbance is obscure. According to the observations of Lewis, Manson, and Bancroft,* conducted in India, China, and Australia, the presence of filariæ in the blood and lymphatics is thought to be largely concerned in the causation of the disease in Eastern countries. It has been shown that the parasite is at least very frequently present. Certain filariæ have unquestionably been found in the blood and lymph in cases of enlargement of the scrotum—so-called “lymph-scrotum”—with chylous exudation, and also in cases of elephantiasis asso-

* See an interesting article by Fayer on the relation of *filaria sanguinis hominis* to the endemic diseases of India. *Lancet*, Feb. 8 and 15, 1879.

iated with lymph-serotum.* The question of the identity of these diseases, however, is a subject of dispute. Manson† brings forward cases to prove that they are identical. The same author is moreover of the opinion that the mosquito is instrumental in propagating the filariæ, and consequently the disease. It has been noted that the affection is one confined in a great measure to the poor and improperly cared-for, the well-to-do being seldom attacked. It is met with in both sexes, but is more common in males. It rarely appears before puberty. It is neither hereditary nor contagious. The subject of congenital elephantiasis, cases of which are sometimes encountered, has received attention from Busey.‡

Pathology.—The anatomy of the disease has been studied by Virehow,§ Kaposi,|| and others. The tissues, when cut into with a knife, are found to be firm, and show a whitish or yellowish surface. When pressed upon, they give forth a yellowish fluid. The bulk of the growth is made up of hypertrophic connective tissue, having its seat for the most part in the subcutaneous connective tissue; the corium is likewise hypertrophied, although proportionately to a much less extent. The mass is composed of bundles of stout fibres, running in various directions, forming a dense net-work, together with smaller fibres and nucleated cells. The corium and epidermis vary in thickness and structure, according as the surface of the growth is smooth or covered with papillary elevations. These latter are often greatly developed, forming warty growths, and are composed of elongated papillæ, either with or without epidermic covering, according to their situation. The bloodvessels of the diseased tissue are found much enlarged. The lymphatics are, in like manner, greatly increased in calibre. When the disease has continued for some time, various changes may take place in the deeper parts of the structure, among which may be mentioned fatty degeneration and atrophy of the muscles, and thickening of the bones accompanied by exostoses.

* See "Observations on Lymph-Serotum and Allied Diseases," by Patrick Manson, in *Med. Times and Gaz.*, Nov. 13 and 20, 1875.

† Additional Notes on *Filaria Sanguinis Hominis* and *Filaria* Disease. See *Customs Medical Reports*, xiii. 30; xiv. 1. Shanghai. (Reprint.)

‡ Congenital Occlusion and Dilatation of Lymph Channels. New York, 1878.

§ Die Krankhaften Geschwülste, Band i. p. 308.

|| Loc. cit., vol. iii. p. 140.

Diagnosis.—After enlargement has begun to take place, no difficulty can arise as to the diagnosis. The peculiar erysipelatous inflammation, together with the part attacked, also points to the disease. Recurrent attacks of erysipelas about a limb should always be regarded as indicative of a probable increase in the connective tissue. It need scarcely be mentioned that no connection exists between the disease under consideration and lepra, or leprosy. At the same time they may coexist, as has been shown by Vincent Richards.*

Treatment.—During an inflammatory attack the part should be treated by absolute rest, and cold or hot applications. After the pain and heat have subsided, the limb may be rubbed with one of the mercurial ointments and encased in a well and closely applied bandage. The solid rubber bandage, either alone or in connection with other remedies, proves of great service here. This method of treatment, together with rest, should be persevered in as long as any benefit seems to follow its employment. The constitutional symptoms accompanying the local disturbance are to be treated as the case may seem to require. Quinine is unquestionably of value in lessening the severity of the erysipelatous attacks. Iodide of potassium is also said to be of benefit in the early stages of the disease. The value of change of climate should also be considered. In Eastern countries, according to Fayrer, no remedy is so potent, and if effected in the earliest stages may completely arrest the disease. Ligation of the main artery supplying the limb may be practised, but, notwithstanding that some of the results have been satisfactory, the operation cannot be recommended. Wernher† gives an analysis of the results of treatment by this means in thirty-two cases, the femoral being the artery in twenty-three cases. In the latter series the size of the leg was immediately reduced, but the result was permanent in three cases only. In four cases in which digital and instrumental compression of the femoral was tried, the diminution in size was as rapid and the effect as permanent as after ligation of the artery.

In cases in which the genitalia are involved, the knife offers

* Endemic and other Diseases of Hot Climates, by Drs. Farquhar and Tilbury Fox. London, 1876.

† Deutsche Zeitschrift für Chirurgie, 1876.

the best means of relief. Authors agree that the removal of these growths by amputation is comparatively safe and easy. Osgood * states that over sixty cases involving the scrotum have been operated upon in China within the last fifteen years, and that all, without a single exception, have recovered. On the other hand, Fayrer † states that out of one hundred and ninety-three cases operated on in the Medical College Hospital in Calcutta between 1859 and 1871, eighteen per cent. proved fatal, some of the deaths, however, being due to imperfect sanitary conditions.

Prognosis.—If the patient be placed under proper treatment early in its course, much may be done to arrest the process. When, however, the growth has become fully developed, but little permanent relief can be looked for. Striking deformity attends the disease, the part involved usually attaining great size and weight, while not infrequently, in the course of years, a limb will assume huge proportions, resembling in contour as well as in bulk the foot of an elephant. The penis, serotum, and labia likewise enlarge at times enormously, forming solid tumors, often weighing many pounds, and sometimes as high as a hundred pounds.‡ In these cases locomotion is interfered with, if not altogether prevented. Individuals affected with elephantiasis seldom perish from the effects of the disease, though a fatal result may, in rare cases, follow an inflammatory attack.

DERMATOLYSIS.

Syn., Cutis Pendula; Pachydermatocoele.

DERMATOLYSIS CONSISTS OF A MORE OR LESS CIRCUMSCRIBED HYPERTROPHY OF THE CUTANEOUS AND SUBCUTANEOUS STRUCTURES, CHARACTERIZED BY SOFTNESS AND LOOSENESS OF THE SKIN, AND A TENDENCY TO HANG IN FOLDS.

Symptoms.—It may exist as a slight affection, or to such an extent as to cause serious inconvenience. The skin and all its

* On the Treatment of Elephantiasis, with a Table of Fifty Cases. New York Med. Record, April 8, 1876.

† Lancet, March 29, 1879.

‡ A huge scrotal growth of this character came under observation at the Hospital of the University of Pennsylvania, and was successfully removed by Dr. John Neill. Amer. Jour. of Med. Sci., July and Oct. 1875.

component parts, including hairs, follicles, glands, and ducts, as well as the deeper structures, are hypertrophied. The tissues are greatly thickened, bulky, and incline to hang in folds; not uncommonly the layers lap over one another, like the folds of a loose garment. To the touch the skin is soft and pliable, and is remarkable for its laxity, reminding one of adipose tissue. Its surface is rugous, owing to the hypertrophy of the follicles and natural folds and lines of the part, and has the appearance of normal skin viewed through a magnifying-glass. More or less pigmentation is also present, the skin being at times brownish in color.

The affection may be confined to a certain region, as the back, or may show itself in several distinct localities, as upon the face and arm. It has been observed to occur about the head, face, neck, back, arms, abdomen, genitalia, and thighs. One or a number of growths may be present. The course of the disease is usually slow. It occasions, as a rule, no annoyance beyond the inconvenience of the mass.

The tissues may develop to an enormous size, as in the case of Nélaton, reported by Keen,* where the disease sprang from the neck and shoulders and fell in the form of a huge cloak over the whole back, reaching to the buttocks. A somewhat similar case presented itself to my notice. The late Valentine Mott was the first in this country to call attention to the disease. He reported five marked cases, portraits of two of which accompany his communication.† A remarkable case, comparing favorably for extensive development with the well-known case of Eleanor Fitzgerald figured by Bell,‡ is reported by Fritsche, of Poland.§ Stokes, of Dublin, also records a case, with a drawing, upon which he performed a successful operation.|| Weeden Cooke's case, which I had the fortune to see, may also be referred to. The subject was a girl of seventeen, who was affected with an enormous hypertrophy of the cutaneous tissues about the left hip and thigh, extending down as far as the knee, and there abruptly terminating. The integu-

* *Phot. Rev. of Med. and Surg.*, vol. ii. p. 45.

† *Med.-Chir. Soc. Trans.*, vol. xxxvii. p. 155.

‡ *Principles of Surgery*, vol. iii. London, 1808.

§ *Trans. Lond. Clin. Soc.*, 1873. The portrait may be found in *Tilbury Fox's Atlas of Skin Diseases*.

|| *Dublin Jour. of Med. Sci.*, Jan. 1876.

ment was greatly hypertrophied, and hung loosely in four or five folds, one overlapping the other, which could be lifted up separately. It resembled in form the leg of a pair of loose Turkish trousers. It dated back only three years, and latterly had increased with rapidity.

Pathology.—The growth consists of a simple hypertrophy of the integument, including all its parts, and especially of the subcutaneous connective tissue. Under the microscope it is seen to consist largely of soft fibrous or lipomatous tissue, or of both in varying proportions. No cause can be assigned for the abnormal development; at times it is congenital, in other cases, as in that of Mr. Cooke, it does not make its appearance until puberty or later. Hebra and Kaposi describe the disease in connection with elephantiasis, and designate it *ELEPHANTIASIS TELANGIECTODES*. They state that it is always congenital. Such, however, is not always the case with the affection under consideration. It must be regarded as closely allied to molluscum fibrosum, sometimes occurring with this manifestation.

Treatment.—The knife offers the only means of removing the growth, the advisability of an operation depending upon its location and extent.

HYPERTROPHY OF THE HAIR.

Syn., Hypertrichosis; Hypertrichiasis; Trichauxis; Polytrichia; Hirsuties.

Symptoms.—Here are included all those cases in which the hairs are unusually developed, as regards their size and number, either upon regions where the hair is ordinarily found, or in places where the growth is abnormal. The hair may be of the average thickness or finer or coarser than normal. Sometimes a number of hairs grow from a single follicle. The hair upon the scalp in both sexes not infrequently grows to an unusual length and in great quantity. Wilson* mentions several cases in women where it measured six feet in length, and I myself have seen a woman in whom it swept the ground, the unusual development having begun after a serious illness at the age of seventeen.

The hair in other localities to which it is natural, as the eye-

* Lectures on Dermatology. London, 1878.

brows, axillæ, pubes, and beard in men, may also take on augmented growth and attain uncommon development. Examples of long beards reaching to the ground are recorded by Eble,* and more recently Leonard† has reported the case of a man, forty-five years of age, whose beard measured over seven feet in length, and which had been twelve years in attaining this growth.

Instead of the fine, downy hairs present over the greater portion of the body, increased activity of hair-growth may manifest itself, either universally, over the whole surface, or locally, in certain parts, as the face, which may continue until the body is extensively covered with long, stout hairs. A case where it was universal is reported by Wilson,‡ occurring in an unmarried woman, thirty-three years of age, the growth dating from puberty. With the exception of the crown of the head, which had only lately become bald, the rest of the surface, including the sides of the head, the face, neck, trunk, and limbs, was covered with black, stiff hair, from half an inch to two inches in length, and thick enough to conceal the skin. The woman was robust, but was amenorrhœic and in ill health. The peculiarity of this case is the fact that the growth was not congenital. This form of development, whether local or universal, may take place in either sex, and at all periods of life. As a local manifestation it sometimes gives rise to much disfigurement in women, in the form of a moustache or beard, instances of which are not uncommon. Dr. Hardaway§ and myself|| have both reported marked cases.

Examples of “*homines pilosi*,” or hairy people, the development being, as a rule, both congenital and hereditary, as in the case of Shevémaong, the “*homo hirsutus*” of Burmah, and his family, are from time to time met with, extraordinary cases of which have now and then been reported.¶ Some races, as the Aïnos, of the island of Yesso, are noted for their excessive hairiness.

* Die Lehre von den Haaren. Wien, 1831.

† The Hair. Detroit, 1880.

‡ Lectures on Dermatology. London, 1878.

§ St. Louis Med. and Surg. Jour., Nov. 1877.

|| Arch. of Derm., April, 1877.

¶ For an account of such cases, see Wilson, Diseases of the Skin, p. 716, London, 1867, and Lectures on Dermatology, London, 1878.

Stout, stiff, and sometimes long hairs are of common occurrence in connection with moles, when the formation is termed *NÆVUS PILOSUS*; while if it possess a rough, uneven, warty surface, it is called *NÆVUS VERRUCOSUS*. These growths are encountered upon various regions; existing upon the scalp, the hairs are usually considerably increased in calibre, so much so at times as to resemble the hair of the lower animals.

Hairs occasionally show abnormality as regards the direction in which they grow, either within or after leaving the follicle, the condition being termed *TRICHIASIS*. It is met with upon the scalp and eyebrows, and upon the eyelashes, where, at times, the hairs exhibit a tendency to turn inwards towards the eyeball.

The condition known as *PLICA* or *PLICA POLONICA* (formerly common in Poland and observed chiefly among the poorer classes), in which the hair, through long-continued neglect, uncleanliness, and at times the presence of lice and of eczema, becomes matted together in the form of a mop, may be here referred to. It is not a disease, as was formerly supposed, but is merely an entangled, felted state of the hair, brought about by inattention to combing and cleansing. It is rarely, if ever, encountered in this country.

Etiology.—Nothing definite can be stated in regard to the causes of these abnormal developments. They may be congenital, the usual case, or they may be acquired, the disposition to increased growth first showing itself later in life. They are more common in persons of dark than in those of light complexion. In women, when the condition is acquired, as it occurs about the face, marked masculine peculiarities are often present. It is prone to manifest itself at the climacteric period; also in connection with uterine or ovarian disease, and in sterile women. As illustrative of the influence of the uterus over the growth of hair, a case of *HIRSUTIES GESTATIONIS*, reported by Sloeum,* may be quoted. Three children were born at full term, and with each gestation a growth of hair on the sides of the face and under the chin started at the beginning of pregnancy and continued until childbirth, growing to the length of one and a half inches. As the catamenial function returned, the hair fell out, the face assuming its normal

* New York Med. Record, 1875, p. 470.

smoothness. Hamilton* has called attention to the not infrequent occurrence of hairy growths on the faces of insane women; and Fabre† has also pointed out striking changes of hair in consequence of various mental states in women. Hypertrophy of the hair is also known to follow nerve injuries, and to manifest itself upon paralyzed parts. Local stimulation or irritation may also be mentioned as one of the causes. Cases have been recorded, for instance, in which lanugo developed into strong, stiff hairs from inunctions of oils, and upon the site of a former blister.

Treatment.—The removal of these augmented growths of hair is usually confined to small areas, as, for example, hairy *nævi*, the upper lip, and the face generally of women. The best method is by electrolysis, as recommended by Michel,‡ Hardaway,§ Piffard,|| and Fox,¶ to the value of which I can add my own testimony. The operation is both simple and safe. It consists in the introduction of a fine needle into the hair-follicle and the destruction of the hair-papilla by means of the galvanic current. The needle is connected with the negative pole; while the positive pole with sponge electrode is held by the patient. I use a No. 12 sewing-needle, ground down to the finest calibre (which after many experiments I have found to be the best), attached to a small holder made in the form of a pocket lead-pencil. From six to twelve cells of a recently charged galvanic battery are necessary. The needle is introduced before extracting the hair, and allowed to remain in contact with the papilla of the hair and follicle until the hair is found to be so loose that it may be withdrawn upon the least traction. In cases where the base of the follicle has not been reached, the needle should be re-introduced. The hair should never be extracted until it is detached from the papilla and loose.

The needle is first introduced, and the circuit then made by the patient touching the sponge electrode; to avoid shock, the patient should not break the circuit until after the needle has been withdrawn. The length of time required for each hair will vary from

* New York Med. Record, 1881, vol. i. p. 281.

† *Les Relations pathogéniques des Troubles nerveux*, p. 513. Paris, 1880.

‡ St. Louis Courier of Medicine, Feb. 1879.

§ Trans. Amer. Derm. Assoc., 1878; also Phila. Med. Times, Feb. 14, 1880.

|| Diseases of the Skin, p. 307. New York, 1876.

¶ New York Med. Record, March 22, 1879.

ten to thirty seconds, according to circumstances. Slight frothing, more or less congestion, and the formation of a wheal, followed sometimes by a small papule, pustule, or reddish spot, occur about the opening of the follicle. If the operation be skilfully performed, no scars, or slight ones only, remain. The amount of pain accompanying the procedure, in my experience, varies with the individual: it may be slight or decided, but is rarely so severe as to be intolerable. In most cases, after a few sittings a degree of tolerance is established. It is usually most trying about the region of the upper lip, and here and there about the neck over the course of certain nerves. A good light is necessary, and where the eyesight is at all defective, or where the strain upon the eyes is great and often repeated, a lens will prove of assistance. The operation should be confined to the removal of the stiffer and colored hairs, the lanugo being allowed to remain. The results with the latter in my experience have not been satisfactory. In the case of hairy nævi, excision or cauterization of the whole formation often proves the most effectual and permanent method of treatment.

Depilatories, remedies of a caustic nature which act destructively upon the hairs, are sometimes of service in destroying patches of hair. They consist usually of several substances mixed in varying proportions, the active ingredients being either sulphide of arsenic, sulphide of sodium, sulphide of barium, sulphide of calcium, or quick-lime. The sulphide of barium is one of the best. I can recommend the following:

R Barii Sulphidi, ʒii;
 Pulv. Oxidi Zinci,
 Pulv. Amyli, aa ʒiii.
 M.

Another good formula may be given as follows:

R Sodii Sulphidi, ʒii;
 Cretæ Preparatæ, ʒvi.
 M.

They are made into a paste, with water, and laid on the hairy part to be destroyed, as a thin coating, for ten or fifteen minutes. As soon as heat of skin is experienced, the powder should be

scraped off and the surface washed and anointed with some bland ointment. A starch or magnesia powder may be applied later to conceal the signs of irritation upon the skin.

All such preparations should be employed with caution, and only under the direction of a physician: on account of their caustic properties, they are not infrequently the source of mischief. They require to be repeated in their use every few days or as the case may demand.

HYPERTROPHY OF THE NAIL.

The nail-structure may augment itself in various directions, as in length, in width, or in thickness. The term hypertrophy of the nail is applied to any increase in size, from whatsoever cause. Supernumerary nails are occasionally observed; so also nails upon regions of the body where this structure does not usually occur, as upon the extremities of amputated fingers, where no rudiment of the matrix can have existed.*

Hypertrophy may take place as an idiopathic affection, occurring independently of diseases in other parts of the body; or it may appear in connection with certain general or constitutional disorders, as ichthyosis and syphilis. The process may manifest itself as a simple increase in the normal growth of the nail, termed *ONYCHAUXIS*; or, as is more usually the case, it may be attended with changes of color, consistence, and shape. When the nail inclines to grow forward and to the side, in a twisted, bent, or curved manner, more or less like the horn of a ram, the condition is called *ONYCHOGRYPHOSIS*. The nails here are usually much thickened, hard and horny, yellowish or brownish in color, and curved into various shapes. One, several, or all of the nails may be so affected. It takes place more frequently upon the toes than upon the fingers, and is ordinarily met with in old people. The skin immediately around the posterior outer surface of the nail inclines at times to grow over the back of the nail, giving rise to the condition designated *PTERYGIUM OF THE NAIL*.

Hypertrophy of the nails is apt to take place as the result of

* Wilson, loc. cit., p. 709.

certain diseases of the skin, as psoriasis, ichthyosis, leprosy, and syphilis. The appearances presented in these affections vary, although usually marked by more or less softening and exfoliation. Hypertrophy of the papillæ of the matrix occasionally occurs, causing the nail to become thickened upon its exposed surface. Increase in the coloring matter of the nail, producing yellowish, brownish, or blackish discoloration, may also be mentioned as one of the abnormal states now and then encountered, existing either as an idiopathic affection or in connection with other diseases.

The nail at times takes on an abnormal direction of growth, extending itself laterally into the soft parts. When this occurs, inflammation of the skin is apt to be produced, giving rise to PARONYCHIA. The matrix of the nail frequently becomes the seat of inflammation and of new formations, followed by changes of structure of the nail-substance, the condition being termed ONYCHIA. It may result from external injuries or from certain diseases. Eczema, psoriasis, leprosy, and syphilis are all known to attack the matrix.

Syphilitic onychia is due to the cellular deposit of syphilis taking place about the matrix of the nail, which undergoes the same pathological changes as this formation is subject to in other regions of the body, modified by the peculiar anatomical structure of the part. One or more of the nails may be affected. The process frequently extends itself to the cutaneous tissues around the nail, producing redness, swelling, ulceration, and a copious discharge of an offensive, puriform fluid. The nail not infrequently becomes detached from the matrix.

The vegetable parasites of *tinea trichophytina* and *tinea favosa* at times make their habitat upon and within the nail, which they penetrate in all directions, producing increase in size, and subsequently softening and disintegration of the tissue, the condition being termed ONYCHO-MYCOSIS. Several or all of the nails may be attacked.

Treatment.—This will vary with the cause, which must in each case be sought for. Both local and constitutional remedies are employed, either alone or conjointly, according to the nature of the affection. Idiopathic hypertrophy of the nail may be removed by the knife or scissors after the growth has been softened by hot-water baths or poultices. It is generally advisable at the

first operation to remove a portion only of the hypertrophy, on account of the liability of the nail to split.

In-growing nails should receive attention in the avoidance of all pressure, frequent cutting, and protection of the soft parts by means of lint placed between the nail and the skin-fold. Alterations in the nail through constitutional diseases, as, for example, syphilis, must receive general treatment suitable to the case. Nails invaded by fungi are to be treated by parasiticides, together with internal remedies, if the latter seem to be indicated.

CLASS VI.

ATROPHIÆ—ATROPHIES.

IN this class may be grouped all those affections of the skin and its component parts which are characterized by a diminution or degeneration of the elements which go to make up the normal structure. The changes which take place may be due to simple atrophy, as of the pigment in gray hair; to a combined process, including both atrophy and hypertrophy, the atrophy, however, predominating, as in vitiligo; or to so-called degenerative atrophy, as in morphœa.

The absence of the proper amount of coloring matter in the skin gives rise to more or less disfigurement, varying in degree according to the extent to which it is wanting. It may exist either as a congenital or as an acquired condition. When congenital, it is termed albinism. Acquired absence of pigment in the skin may be idiopathic, as in vitiligo; or it may occur in the course of other diseases, as, for example, in morphœa.

The pigment of the hair is frequently absent in part or wholly, giving rise to various degrees of canities. The skin itself occasionally suffers from premature idiopathic atrophy, either in a diffused or in a circumscribed form, usually the latter, as in the *striæ et maculæ atrophicæ* and in morphœa. The hair of the scalp and the scalp itself are frequently the seat of atrophy, as in alopecia from various causes and in alopecia arcata. The nail is also sometimes attacked.

ALBINISM.

Syn., Albinismus; Congenital Achroma; Congenital Leucopathia; Congenital Leucoderma; Congenital Leucasmus.

The condition which has been termed albinism consists in a congenital absence of the normal pigment. It may exist uni-

formly over the whole of the surface, in which case it is said to be *universal*; or in the form of circumscribed patches, when it is designated *partial*. As a universal anomaly it is met with in people of various races, who have received the name of albinos. These individuals are characterized by the more or less complete absence of coloring matter in the skin and hair, and even in the iris and choroid coat of the eye. The skin is of a milky-white or pinkish color, varying as to shade. The hair of the head, as well as of the hairy portions of the body, is also usually white or yellowish white; at times it is as white as snow, and has a silvery appearance, while in very rare instances it may be red, as in a case reported by Folker.* It is, moreover, generally fine, thin, soft, and silky.

The eyes are highly sensitive to light, so much so that they are scarcely able to tolerate daylight. The pupils dilate and contract constantly, the eyeballs incline to oscillate, and there is almost continuous involuntary winking. In color the iris is pale-bluish or pinkish, while the pupil presents a pinkish or bright-red appearance, owing to absence of pigment in the choroid. Albinos, as a rule, are of short stature, and are usually deficient in strength and in mental capacity. It is said that they almost always have a disposition to diseases of the chest.

Partial albinism is seen in the negro. It consists of one or more variously sized and shaped milky-white or pinkish-white patches, which may occur upon any region. The hairs of lanugo which may exist upon a patch are branched, as in the case of universal albinism. The eyes are not deprived of pigment. Negroes thus affected are designated "pied" or "piebald," and are not rare in our Southern States. Occasionally a re-deposit of pigment takes place, the skin which was white becoming again black, as in a case reported by Dr. T. F. Wood.† On the other hand, cases are not rare where the atrophy of pigment goes on to such an extent that large areas of skin become white. Marcy‡ gives an interesting account of the well-known Cape May albinos, the mother and father being "fair emblems of the African race." In this family

* Lancet, May 31, 1879.

† Medical Examiner, July 19, 1877.

‡ Amer. Jour. of Med. Sci., 1839.

there were three negroes and three albinos. The first two children were average male negroes, who were followed by two female albinos. Next came a female black child, and lastly another albino, a male.

Albinism, although of rare occurrence, is met with in all races, and among those of cold as well as those of hot climates. It occurs in Africa, in the various countries of Europe, and in our own country, especially among negroes. The causes are unknown. The condition is frequently, although by no means always, inherited. One child only out of a family may be so affected.

VITILIGO.

Syn., Acquired Leucoderma; Acquired Leucopathia; Acquired Leucasmus; Acquired Achroma; Acquired Piebald Skin.

VITILIGO IS AN ACQUIRED DISEASE, CONSISTING OF ONE OR MORE USUALLY SHARPLY DEFINED, ROUNDED OR IRREGULARLY-SHAPED, VARIOUSLY SIZED AND DISTRIBUTED, SMOOTH, WHITISH SPOTS, WHOSE BORDERS USUALLY SHOW AN INCREASE IN THE NORMAL AMOUNT OF PIGMENTATION.

Symptoms.—The disease begins by the appearance of one or more variously sized spots, which increase slowly or rapidly in size, new ones showing themselves from time to time. The number varies from several to a dozen or more; usually, however, they are not numerous. Their outlines are well defined and terminate abruptly against skin which is generally darker than normal, commonly of a mottled brownish-yellow tint. They have a smooth surface, and are on a level with the surrounding skin, being neither raised nor depressed. In shape they are for the most part roundish; they are also frequently oval, and at times, especially about the face, angular and irregular. In size they vary, according to their age and the rapidity with which they enlarge; they are usually of all sizes from a small coin to the palm of the hand and larger. Ultimately, as they grow towards one another, they coalesce, forming larger patches, which may cover the greater part of a limb or the trunk. They have a pinkish-white or a milky-white color, varying somewhat in shade, which is manifestly due to the absence of the normal pigment of the skin. Hairs existing in their area may or may not be whitened. The sebaceous and su-

deriparous secretions remain normal. The skin feels normal to the touch. Sensibility likewise is preserved, there being neither itching, pain, nor anæsthesia. The increased coloration surrounding the spots is a constant feature; at times it is present only to a slight extent, in other cases it is marked. It is a diffused pigmentation, becoming more intense as it approaches and touches the spot; beyond, it fades gradually into the healthy skin.

The disease may appear upon any part of the body, from the crown of the head to the feet, upon both hairy and non-hairy regions. In the majority of cases it occurs upon the backs of the hands, and upon the trunk. The course of the affection is exceedingly chronic; it usually lasts throughout life, the spots increasing slowly in size as well as in numbers, in some cases until the greater portion of the skin is involved. The disfigurement is usually striking, and proves a constant source of annoyance to the patient, especially if the lesions chance to make their appearance on the face.* The lesions are usually more pronounced in summer than in winter, on account of the surrounding pigmentation being darker.

Etiology.—The affection is rare. It is encountered in both sexes, in light-haired and in dark-haired people, more often in the latter, and in various races. It usually first shows itself in early adult life, although it often makes its appearance in childhood. The general health is ordinarily good. It is due to a disturbance of innervation. It is observed sometimes in connection with other diseases of the skin, as alopecia areata, and morphœa.

Pathology.—The process consists in both an atrophy and a hypertrophy of the normal pigment of the skin, which appear to take place simultaneously. One part of the skin seems to suffer at the expense of the other. Microscopic examination shows a total absence of the coloring matter in the whitish spots, while the yellowish or brownish discoloration which surrounds each spot is found to contain an excess of pigment.

Diagnosis.—The disease is not to be confounded with chloasma, which it resembles. In vitiligo the spots are whitish, clearly defined, and surrounded by pigmentation; in chloasma the spot itself is yellowish or brownish, and is unaccompanied by any

* See Plate M of my Atlas of Skin Diseases.

whiteness whatsoever. It may also be mistaken for *tinea versicolor*; but here, as in *chloasma*, the patches themselves are yellowish, the skin between them being normal in color. The skin, moreover, in *vitiligo*, is perfectly smooth and without desquamation; in *tinea versicolor* the surface is always the seat of more or less *furfuraceous* desquamation. The microscope will further aid in the diagnosis. It is also to be distinguished from *morphœa*. The affections, however, differ in so many particulars as scarcely to permit of confusion in diagnosis; the spots of *morphœa* may always be known by the alteration which takes place in the structure of the *corium*.

Treatment.—Where the health is impaired, or where there is functional derangement, strict attention should be devoted to improving the general condition. A full tonic treatment, including arsenic, which in my opinion is the best remedy, should be persisted in for some time. In regard to local treatment, with the view of improving the disfigurement, the greatest amount of success will attend the removal of the yellowish and brownish discolorations immediately around the whitish spots. The hypertrophy of the pigment, rather than the atrophy, is to be treated, which is done in the manner described in speaking of the *chloasmata*. The whitish patches also may be stimulated, as, for example, with *aetum cantharidis*, pencilled lightly over the surface from time to time, with the view of keeping up a congestion of the capillaries. The galvanic current may also be employed. Upon the whole, the treatment of *vitiligo* is unsatisfactory.

Prognosis.—It will be found, as a rule, that the spots incline to increase in size very slowly, extending over a period of years, until a considerable portion of the surface is occupied; they are seldom permanently arrested in their progress. At times, however, they cease growing, and remain at a stand-still for the rest of life. In rare cases the skin has been known to become normal again. In a case under my observation very marked improvement occurred spontaneously, in the course of several years. The disease is attended by no unpleasant symptoms beyond the disfigurement.

CANITIES.

Syn., Grayness of the Hair; Whiteness of the Hair; Blanching of the Hair; Atrophy of the Hair Pigment; Trichonosis Cana; Trichonosis Discolor.

This may occur either prematurely, early in life, or, as is much more commonly the case, later, as the result of old age, when it is termed senile canities. Premature grayness of the hair may show itself either universally, involving the whole of the hairy system, or in places, forming tufts or locks of gray or white hair. The color may be of any shade from black or brown to white; usually it is gray. The hairs may be discolored throughout their entire length or only at certain points; the shade may also vary in different places. Wilson* mentions a case where every hair presented a succession of alternate brown and white markings throughout its entire extent, the white portion of which he found to be due to the accumulation of minute air-globules in the texture of the hair. Canities may occur at any age, but is rarely seen before adult life. After the process has taken place, the hairs either remain without their normal supply of coloring matter throughout the rest of life, or, rarely, after a longer or shorter period, regain it, as in the cases cited by Wilson and in others quoted by Leonard.† In rare cases several changes of color may occur. Thus, Smythe‡ reports the case of a man aged forty-seven, who had up to his thirty-fifth year a fair skin with light hair and dark eyes. About this time his hair began to turn gray, but the hair which did not turn gray turned to nearly jet-black, his skin at the same time assuming a dark and bronzed hue. Prentiss§ records the case of a young lady where the color changed from a yellowish shade to black under the hypodermic use of pilocarpin. The change began after two weeks' use of the remedy. The hair may also change its color with the seasons, becoming gray in winter and recovering its darker color in summer.|| In cases of severe illness the hair may change

* Lectures on Dermatology. London, 1878.

† The Hair, p. 127. Detroit, 1880.

‡ Arch. of Derm., July, 1880.

§ Phila. Med. Times, July 2, 1881.

|| Wilson. Lectures on Dermatology, p. 171. London, 1878.

its color, as from brown to red and from brown to black. Walenberg* records a case where after scarlatina, accompanied by unusually severe and complete desquamation, the nails and hair of the whole surface were shed, and were replaced by a milky-white skin and white hair, as in albinos, the natural complexion previously having been dark. Nayler also records an instance of white hair following scarlatina.† It may also turn gray from nerve injuries, and after ligation of the carotid artery.‡

The time which hairs require for complete change of color is found to vary exceedingly. The question as to whether they can be deprived of their color suddenly—*i.e.*, within twenty-four hours—is differently answered by observers, but I think the evidence is sufficiently strong for believing that it may so occur. Among others, Wilson§ and Landois|| may be cited as crediting its occurrence, both observers explaining the phenomenon by the presence of a gas- or air-bubble taking possession of the hair. Enough cases are on record to prove that such may be the case, reported instances of which, historical and of more recent date, may be found in the works of Wilson,¶ Purdon,** Tuke,†† Leonard,‡‡ and others. The result usually takes place only under nervous shock or strong emotional influence, more particularly fear and grief. Hebra and Kaposi,§§ on the other hand, are of the opinion that the change can take place only gradually, and consequently that the reported cases in which the graying is said to have occurred, for example, “in the course of the night” cannot be received as absolutely true. Internal remedies do not appear to exert any influence in restoring the pigment. Dyeing is the only remedy for disguising the condition.

* London Medical Record, June 15, 1876.

† Diseases of the Skin, p. 10. London, 1874.

‡ Med.-Chir. Trans., 1881, p. 252.

§ Loc. cit., p. 732.

|| See an interesting case of “sudden graying of the hair” by this writer in Virchow's Archiv, April, 1866.

¶ Loc. cit.

** Treatise on Cutaneous Medicine. London, 1875.

†† Influence of the Mind upon the Body, Amer. ed., p. 276. Phila., 1873.

‡‡ Loc. cit.

§§ Loc. cit., vol. iii. p. 192.

ATROPHIA CUTIS.

Syn., Atrophia Cutis Propria; Atrophy of the Skin.

Atrophy of the skin is characterized either by a diminution in its bulk, or by a degeneration of its elements. Simple atrophy is marked by a general decrease in the number of the normal constituents of the tissue. The skin is thin and more or less wasted, and presents a dried, shrivelled appearance. Degenerative atrophy exhibits structural alteration, with or without actual loss of substance. The tissue so affected is usually somewhat hardened, yellowish or whitish in color, and has a waxy, fatty, bacony look. Atrophy of the skin may be general in character, as in senile atrophy, and in certain rare forms of disease; or it may be partial or limited in its invasion, as in atrophic lines and spots.

It may occur, so far as our knowledge extends, as a substantive disease (idiopathic atrophy); or as a manifest symptom in the course of some other disorder, or following injury to one or more of the greater nerves (symptomatic atrophy). The former is seen in atrophic lines and spots, in morphœa, and in senile atrophy; the latter in connection with or following certain constitutional and local disorders, as, for example, seborrhœa, lupus, syphilis, and tinea favosa. Where the condition is due to a nerve injury, as Mitchell has shown,* the tissues often undergo remarkable atrophic changes, the muscles wasting, the subcutaneous connective tissue disappearing, and the skin becoming thin, shrivelled, dry and harsh, and yellowish or brownish in color.† The hair and nails may also degenerate.

In this connection, as a result of impaired nutrition, the condition known as GLOSSY SKIN may be referred to, which has been described by Paget,‡ and by Mitchell, Morchouse, and Keen,§ and more recently by Mitchell.|| The skin (generally of the ex-

* Injuries of Nerves, and their Consequences. Phila., 1872.

† The case of neuroma of the skin referred to in this work, where a portion of the brachial plexus of nerves was exsected, shows these atrophic changes markedly.

‡ Med. Times and Gaz., March 24, 1864.

§ Gunshot Wounds and Other Injuries of the Nerves. Phila., 1864.

|| Loc. cit., p. 155.

tremities, especially the fingers) becomes pinkish or reddish, smooth, shining and glossy, as though varnished, the lesions resembling in appearance chilblains. The parts involved usually become devoid of hair, while the skin loses its natural lines, and sometimes shows excoriations and fissures. It is accompanied with burning pain, and follows intractable neuralgia, wounds, and other lesions of the nerve trunks. Similar changes sometimes occur in progressive muscular atrophy, due to disturbance of nutrition in the affected part. Balmer* has collected a series of cases where trophic changes, chiefly of the hands, were observed, consisting of inflammation of the matrix of the nail, splitting and thickening of the nail, excoriations, fissures, ulcerations, œdematous and inflammatory swelling of the skin, hemorrhages, and blebs.

General idiopathic atrophy of the skin is a very rare condition, cases of which have from time to time been reported. Thus, with the name "general atrophica cutis," Wilson† describes the following case of Mrs. L. The lady, who had previously enjoyed good health, became the subject of mental anxiety, was weak and poorly, and complained of severe pain in the side, below the heart. The skin in a few days became dark, discolored in patches, and swollen, especially the hands and feet. After a short time the skin about the throat and chest apparently contracted, giving the sensation of a person tightly grasping it. Some months later she fell into a state of great depression, was sleepless, and refused to speak or eat. Both hands were at this time much swollen; later they became stiffened. Her hands and feet were always cold, and, if she became excited, they, as well as her nose, presented a purple tinge. The skin of the arms, face, throat, chest, and neck was hard and contracted, and of a dark olive color. Later, she was extremely emaciated, and her skin so much contracted as to appear too small for her body, and the lower lip fell away from the mouth, showing the teeth and gums. Her fingers were bent and contracted, and ulcerated. The sensibility of the skin was deadened, and the movements of the body were effected with difficulty. The case possesses certain features in common with both morphea and scleroderma, and might be regarded as a severe and peculiar form

* Archiv der Heilkunde, 1875, p. 327.

† Loc. cit., pp. 393, 394.

of either of these diseases. Similar cases are described by Hebra and Kaposi* with the name "xeroderma," or "parchment-skin," which they regard as a form of diffuse idiopathic atrophy of the skin. They describe two cases. The first was that of a girl, aged eighteen, who had suffered from the disease from early childhood. The skin of the face, ears, throat, neck, shoulders, arms, and breast to the level of the third rib was tightly stretched, as if contracted, was pinched up into a fold with difficulty, and felt very thin. Its surface was smooth in some places, whilst in others fine epidermic lamellæ peeled off; or there were flat, linear furrows marked out on the epidermis, so that the surface appeared as dry as parchment, and wrinkled, while the skin itself was highly stretched. In places it was of a white color and was without pigment, while elsewhere it was abundantly dotted over with disseminated, punctiform or lentil-shaped, yellowish or dark-brown, pigmented spots resembling those of freckles, giving the skin a remarkable checkered appearance. Here and there were bright-red pin-head or lentil sized telangiectases. The subcutaneous fatty tissue was not markedly diminished. Sensibility was not impaired. Beyond a sense of tightness, the patient experienced no subjective symptoms. At the level of the third rib and at the upper third of the arm the alteration in the condition of the skin ceased with an almost abrupt line of demarcation. From thence downwards, the skin of the mammae, of the whole trunk, and of the extremities was smooth, pliant, fine, and in fact normal. The general state of the health was good. Owing to the contraction of the skin, the lower eyelids were drawn downwards, and on one side the cornea was ulcerated. The nose towards its tip appeared compressed, in consequence of the shrinking of the skin. The lips could only be slightly separated from each other.

The second case was that of a girl, aged ten, who had also suffered from the disease from earliest childhood. The skin of the face, as far as the submaxillary region, and that of the extensor surfaces of the arms and hands, showed the checkered pigmentation as in the first case. The epidermis, especially on the eyelids and on the cheeks, was wrinkled and shrivelled, the lower eyelids being drawn down, causing ectropion. In the same way the oral

* Loc. cit., vol. iii. p. 252.

and nasal apertures were diminished. The skin was moderately tense, and was with difficulty pinched up into folds. The subcutaneous tissues were not altered. The nose was the seat of a pear-shaped, red, granulating, fissured tumor secreting an offensive sanious fluid, which proved to be an epithelioma. Similar cases have been reported by Glax* and Geber.† That of Glax bears features in common with morphea, and might be viewed as an atrophic form of this disease.

In this connection the cases described by R. W. Taylor‡ and myself,§ under the name of "xeroderma of Hebra,"|| may be referred to. Dr. Taylor reports seven cases, three of which I have had the opportunity of examining. Five of the cases occurred in two families. The disease when fully developed is characterized in the first place by the presence of numerous, disseminated, pin-head and split-pea sized, yellowish, brownish, or blackish pigmentary spots, in no way different in either appearance or nature from lentigines, or freckles, occurring chiefly about the face, neck, trunk, arms, forearms, and hands. Secondly, by the development of pin-point, pin-head, and split-pea sized telangiectases, or aggregations of more or less circumscribed, dilated capillaries, occurring here and there among the freckles, which, however, are far less numerous than the latter. Thirdly, by variously sized and shaped, mostly pin-head to split-pea sized and larger, whitish, smooth, thin, glazed, scar-like, atrophic spots, differing in no essential particulars from ordinary atrophic macules. Finally, in the severer forms of the disease about the face, there occurred in Dr. Taylor's cases variously sized tumors, of the nature of angio-myxoma.

The course of the disease, according to Taylor, is as follows. There occurs first a general hyperæmic stage, with dilatation of the capillaries, and the subsequent formation of the telangiectases. After remaining a variable time, these new growths undergo

* Viertelj. für Derm. u. Syph., 1874, Heft 1; abstract in Arch. of Derm., vol. i. No. 3.

† Allg. Wiener Med. Ztg., No. 35, 1874; abstract in Viertelj. für Derm. u. Syph., 1875, Heft 1, p. 114.

‡ Trans. Amer. Derm. Assoc., 1878.

§ Amer. Jour. of Med. Sci., Oct. 1878.

|| The name "angioma pigmentosum et atrophicum" has been proposed by Dr. Taylor for the disease.

atrophy, leaving on their site brownish spots, constituting the second stage; while the third consists in the continual new growth of vessels upon the seat of those already atrophied, and in the subsequent atrophy of the skin itself. From a study of the disease in my case—a mild one—the conclusion reached was that the pigmentary lesions occurred first, which were in a variable time followed by the development of the telangiectases, which in turn contracted, underwent atrophy, disappeared, and were replaced by the atrophic macules. It is, however, I think, questionable whether the process follows any definite and invariable course. These cases constitute an important contribution to the subject, and go to show that the disease may be of either a mild or a severe type. All the cases, except one, occurred in girls, and in the early months or years of life, beginning usually in the first year. The general health remained good.

Hutchinson* reports a case in which great emaciation was attended by a hide-bound state of the skin. The patient was a young Hebrew woman, who became extremely thin, and her face hard, stiff, and glazy, so that she could scarcely shut her eyes or her mouth. The skin of the trunk and extremities was also in a similar condition, though much less marked. An extensive case of “unilateral idiopathic eutanous atrophy” affecting a large portion of the left abdomen, flank, and leg, with pigmentation and hypertrophy of the cutaneous capillaries, is also recorded by Atkinson.†

The cases I have quoted are so rare, and at the same time are so peculiar, that their exact place in classification becomes a difficult matter, and for the present they may remain where they were originally placed, among the atrophies. In my opinion, however, some of these cases certainly should be grouped with morphœa, as, for example, Atkinson’s, or with scleroderma. The group of diseases of which morphœa and scleroderma may be taken as examples, whether they be viewed as hypertrophies or as atrophies, is one which must, I think, eventually include certain other forms of disease heretofore regarded as different.

* Loc. cit., p. 344.

† Richmond and Louisville Medical Journal, Dec. 1877.

STRIÆ ET MACULÆ ATROPHICÆ.

Syn., Atrophic Lines and Spots.

This form of atrophy may be either idiopathic or symptomatic.

IDIOPATHIC.—The atrophy here occurs without known cause, often making its appearance so indolently and gradually that the attention of the patient is not directed to the lesion until it has existed perhaps for some time. The process may assume the form either of lines or streaks (*ATROPHIA CUTIS LINEARIS*, *STRIÆ ATROPHICÆ*, *LINEAR ATROPHY*), or of spots (*MACULÆ ATROPHICÆ*); the former are much the commoner. The lines are usually one or two lines in width, and vary in length from one to several inches; the spots are roundish or ovalish, and from a pin-head to a pea or a finger-nail in size. When fully developed, both forms of lesion possess a smooth, glistening, sear-like appearance; are perceptibly thinned to the touch; are slightly depressed or grooved; and have a whitish, or bluish-gray, mother-of-pearl color. The lines usually have an irregular, broken, curved or undulatory course. A number of them are generally found upon the same region, in which case they usually run parallel to one another, and almost always in an oblique direction. The spots are generally isolated. They may occur upon any part of the body, but are most frequently seen about the buttocks, trochanters, and pelvis, and on the thighs, upon both extensor and flexor surfaces. They give rise to no inconvenience. They ordinarily run a slow course, lasting years. Their cause is obscure. They are found in both sexes, and at all periods of life. They are sometimes met with as one of the symptoms of morphea.

As stated by Wilson* and Liveing,† and as I myself have observed, the lesions (certainly in some cases) first manifest themselves in the form of erythematous spots or lines, of a rose or violaceous tint, made up of hyperæmic capillaries (as in the first stage of morphea), which sooner or later are succeeded by atrophic changes, and eventually by the characteristic lesions which have given rise to the name *striæ et maculæ atrophicæ*. The first stage of the process, therefore, is not an atrophy, but rather an hyper-

* Diseases of the Skin. London, 1867.

† Brit. Med. Jour., Jan. 19, 1878.

trophy. Liveing reports a case which was under observation six or seven years, where he was able to note the various stages, including the more or less complete obliteration of the oldest lesions. Reference may here be made to cases reported by Wilson* and Taylor.†

The relation of the affection under consideration to morphœa suggests itself. They are doubtless due to the same causes. The first stage of the lesions, as I have already intimated, is identical with that which occurs in the first stage of some cases of morphœa, and in several cases I have seen well-marked atrophic lines and spots associated with the more characteristic patches of morphœa. Kaposi‡ examined an excised atrophic line, and found the epidermis, especially the mucous layer, much atrophied; the papillæ of the corium almost entirely obliterated; the connective and elastic tissue in very thin bundles; the bloodvessels few and slender; the fat cells absent; and the sebaceous glands wasted and degenerated.

SYMPTOMATIC.—The atrophy here results from various causes, as from extreme distention of the cutaneous tissues in pregnancy, in large abdominal and other tumors, and in the mammæ during lactation. The skin in these conditions becomes enormously stretched, and finally forms lines which subsequently atrophy (LINEÆ ALBICANTES). According to Langer,§ the lesions are not due to rupture but to disarrangement of the connective tissue. The connective-tissue bundles of the skin form rhomboid meshes, which, when the integument is distended, stretch most readily in their long axes. The striæ are the result of violent stretching, the bundles in parts becoming parallel and remaining in this position.

SENILE ATROPHY.

This form of atrophy, as its name implies, takes place as the result of old age. The alterations encountered are varied in char-

* Journal of Cutaneous Medicine, vol. i. No. 2, 1867. In this paper will be found cases which undoubtedly are examples of morphœa.

† Arch. of Derm., vol. ii. No. 2, 1876.

‡ Loc. cit., vol. iii. p. 262.

§ Anzeiger der K. K. Gesellschaft der Aerzte in Wien, No. 28, 1879
Abstract in Lond. Med. Record, April 15, 1880.

aeter, affecting not only the corium, but also its component parts and the subcutaneous tissues. The process may be either simple or degenerative; commonly both processes occur together. In simple atrophy the integument, especially the corium, is thin; the surface, moreover, is dry and wrinkled, more or less discolored, and shows signs of general emaciation. According to Neumann,* the epidermis is thinned; the papillæ of the corium are either altogether wanting, or are diminished in size; the pigment changes are irregular, and the hair-follicles either well preserved or wasted. The hair is absent, or present only in the form of lanugo. The sebaceous glands always exhibit marked changes which vary with the region. On the parts supplied with lanugo, they are either destroyed or are transformed into cysts (milia); where the hairs are large, they are found to be enlarged and distended. The sweat glands do not show structural alteration. In degenerative atrophy the connective tissue of the corium becomes metamorphosed into an infiltration of fine or coarse granular matter (granular degeneration), or into a vitreous, homogeneous mass (vitreous degeneration). Fatty and pigmentary degenerations also occur.

ALOPECIA.

ALOPECIA IS A CONDITION OF MORE OR LESS COMPLETE BALDNESS, RESULTING FROM A DEFICIENT GROWTH OF THE HAIR, IRRESPECTIVE OF CAUSE.

The varieties of alopecia are designated according to the causes which have occasioned the disorder, and also with the view of expressing their chief characteristic.

CONGENITAL ALOPECIA.—Absence of hair, either partial or entire, may exist as a congenital condition. Rare cases are recorded in which individuals have been born without hair, as in a case reported by Schede,† where a microscopic examination of excised portions of the scalp failed to reveal the presence of hair-bulbs. Much more frequently, however, the hairs are scanty, or are developed only in certain localities. In these anomalous cases an hereditary predisposition to deficiency of hair may usually be

* Loc. cit., p. 302; see also Hebra and Kaposi, vol. iii. p. 258.

† Archiv für Klin. Chir., Bd. xiv.

noted; some families are remarkable for the limited supply of this structure.

SENILE ALOPECIA—SENILE CALVITIES—BALDNESS OF OLD AGE.—This manifests itself by permanent loss of hair together with general atrophy of the cutaneous tissues. It takes its origin, in the majority of cases, about the crown of the head. It is seen in elderly and old people, the exact time at which it shows itself varying considerably with individuals. Commonly, the hairs turn gray, after which, in time, they become thin and dry and are cast off, either slowly or rapidly, not to be replaced. As is well known, this form of baldness affects men much more frequently than women; as yet no satisfactory reason for this has been suggested. The hair upon other regions of the body also suffers more or less atrophy, but rarely to the same extent, or so soon in life, as upon the scalp. The alterations in the cutaneous structures found in senile baldness have been studied by Neumann* and Pincus.† The changes are found to vary somewhat according to the chronicity of the case and other circumstances, but usually consist in marked atrophy of the follicles, of the sebaceous glands, and of the skin itself.

IDIOPATHIC PREMATURE ALOPECIA—IDIOPATHIC PREMATURE BALDNESS—ALOPECIA SIMPLEX.—The process here may take place either rapidly, in the course of weeks or months, or, as is generally the case, slowly, through a period of years. The hairs may commence to come out at any period after puberty, although ordinarily the affection does not begin to manifest itself until the age of twenty-five or thirty. The scalp throughout the process is seen to be apparently healthy, no marked seborrhœa or other signs of disease being at any time present. At first only a few hairs are from time to time cast off, and these are replaced immediately by a shorter and finer growth of hair. Later these in turn are shed, and are succeeded by still finer hairs. In the course of time even these cease to appear, when complete baldness results. On the other hand, the affection at times may be partially arrested in its progress, and normal hairs may even be produced for a time; but the improvement is not apt to be permanent, and

* Lehrbuch der Hautkrankheiten. Wien, 1880.

† Virchow's Archiv, Bd. xliii.

sooner or later baldness similar to senile baldness remains. This form of alopecia is exceedingly common. It occurs in both sexes, though much more frequently in men. As in the case of senile alopecia, it ordinarily begins about the region of the vertex, and extends itself forward to the forehead, taking in on either side the space between the parietal protuberances. Pincus* finds microscopically an increase of the connective tissue of the corium, and a binding down of this tissue to the layers beneath, which, owing to the arrangement of the altered mesh-work, exert compression destructively on the roots of the hair. The condition, therefore, is an induration rather than an atrophy.

SYMPTOMATIC PREMATURE ALOPECIA.—Here are to be grouped a number of forms of baldness, more or less complete, caused by various diseases either local or general in their character. The loss of hair may be temporary or permanent. Rapid shedding of the hair (*defluvium capillorum*) is apt to follow certain systemic diseases, as, for example, severe fevers, and is usually a transitory affection. Nervous disorders, violent shocks to the nervous system, and mental distress, are also known to occasion either sudden or gradual loss of hair. Affections directly involving the sebaceous glands and hair-follicles are to be regarded as the commonest causes of permanent baldness. Chronic dry seborrhœa occupies a conspicuous position in this connection, and is a fruitful source of alopecia, taking place as the result of atrophy of the glandular structures. Lupus erythematosus attacking the scalp is also followed by bald patches, which may be permanent. Among the local causes, certain inflammatory diseases attacking the scalp, as erysipelas, psoriasis, eczema, variola, may be mentioned as giving rise to more or less alopecia; in these cases the hair usually returns with the general health. Parasitic diseases, as *tinea tonsurans* and *tinea favosa*, are also common local causes of baldness, the condition being usually temporary, the new hairs returning in a healthy state unless the follicle has been destroyed. Syphilis, leprosy, and other severe constitutional disorders also occasion alopecia.

SYPHILITIC ALOPECIA.—Loss of hair may occur at two periods during the evolution of syphilis. It is noted as one of the early

* Berlin Klin. Wöchenschr., Nos. 4 and 5, 1875.

symptoms, and again later, as a result either of circumscribed specific infiltration and ulceration upon the scalp, or of the cachectic state into which the individual is liable to fall. It may be due to a local cause, as a disseminated, erythematous, papular, or pustular syphiloderm, or to a general cause, unaccompanied by cutaneous lesions. The first variety of alopecia is encountered with the early syphilitic manifestations. According to Fournier's observations, it generally appears from three to six months after infection. The hairs become dull, dry, brittle, loose, and are shed more or less uniformly from all parts of the head. Sometimes, however, the fall occurs in the form of patches. The amount shed varies exceedingly; it may be so little as to be scarcely noticeable, or in such quantity as to cause partial baldness. Sometimes the whole hairy system suffers. The hairs upon other parts of the body may be likewise affected. The eyebrows, especially in women, are not infrequently affected, the loss being either partial or complete. The same may be said of the genital region. In a short time, however, especially under treatment, they return, permanent alopecia seldom occurring from this form. The duration is usually from one to six months. Loss of hair also takes place later in the course of the disease, which may or may not be reproduced. Permanent localized alopecia is usually the result of ulcerative lesions.

Treatment.—The remedies employed for the relief of the forms of alopecia just enumerated vary with the condition of the part and the cause of the trouble. Congenital alopecia is rarely so marked as to call for treatment. The scalp may be stimulated by means of oily preparations and stimulating remedies, such as are mentioned in connection with alopecia areata. Senile baldness cannot be remedied. Simple premature alopecia requires attention to the general health, together with the judicious and prolonged use of alkaline or alcoholic lotions, followed by stimulating oils, as in the case of alopecia areata.

Symptomatic alopecia, the result of disease in other parts of the body, or of disease complicating the hairs and sebaceous glands, is to be treated according to the nature of the primary affection. In inflammatory disorders of the scalp, as, for example, psoriasis, the inflammatory process is to be arrested by the means, both local and constitutional, recommended in speaking of these diseases.

In parasitic affections the parasite is to be destroyed and the diseased hairs removed by depilation. The baldness resulting from severe constitutional disorders, as syphilis, should receive local attention in the form of oily preparations and stimulating lotions as well as the proper internal treatment. The management of alopecia following chronic seborrhœa of the scalp will be found in connection with this disease. The external remedies and preparations, more or less modified, referred to in the consideration of the treatment of alopecia areata and seborrhœa, may all be employed for the various forms of baldness.

ALOPECIA AREATA.

Syn., Area Celsi; Alopecia Circumscripta; Porrigo Decalvans; Tinea Decalvans.

ALOPECIA AREATA IS AN ATROPHIC DISEASE OF THE HAIRY SYSTEM, CHARACTERIZED BY THE USUALLY SUDDEN APPEARANCE OF ONE OR MORE CIRCUMSCRIBED, WHITISH, BALD PATCHES, VARYING IN SIZE AND SHAPE, OR OF MORE OR LESS UNIVERSAL BALDNESS.

Symptoms.—It attacks the scalp, face, axillæ, pubes, and other hairy parts of the body. Its common seat is the scalp, and next in frequency the beard in males. The other regions are only rarely invaded. At times the whole body is affected, when there is more or less complete absence of hair. The disease upon the scalp is observed to consist of one, two, or more patches of baldness.* They are usually roundish, circumscribed, and conspicuous areas of disease. Occasionally they are irregular in outline, or assume an elongated or ribbon-shaped course. In size they vary from a small coin to the palm of the hand. At times they coalesce and form patches involving the greater part of one or of both sides of the head. Their seat is frequently about the parietal protuberances and behind the ears, but the occiput as well as other localities may also be attacked. The disease is often unilateral. The baldness is generally complete, the area presenting a whitish, smooth, polished surface, often without trace of hair. In other cases scanty or straggling hairs are met with here and there. Around the border, after the patch has ceased enlarging, the hairs are

* See my Atlas of Skin Diseases, Plate N.

usually firmly seated in their follicles, and exhibit no sign of disease. In other cases, a few small, broken hairs may be detected about the margin, resembling the stumpy hairs of *tinea tonsurans*, which have been considered by some as pointing to the parasitic nature of the affection. They are in reality atrophied new hairs. Not infrequently after the disorder has continued for some time, lanugo, or woolly hairs, may be seen upon the surface. These, however, unless positive recovery is taking place, are usually shed in a variable time. The color of the patch is usually pale or whitish, sometimes slightly hyperæmic, and altogether different from that of the healthy scalp. The follicles are no longer prominent, but are in great part closed and shrunk, often scarcely appreciable, so that the skin becomes thin and smooth, to such an extent that it resembles that of an old man. To the feel it is soft and pliable. It is dry and free of desquamation and sebaceous matter. The patch in the beginning is either upon a level with the surrounding integument or slightly raised or puffed, while in its latter stage it is sometimes slightly depressed. Sensation is generally preserved; at times, however, it is diminished, while occasionally, according to Neumann, there is marked anæsthesia.

The course of the disease is variable. It generally makes its appearance suddenly and without premonition. Often the hair is observed to come out during the night, the patient awaking to find unexpectedly a handful of loose hair and a more or less bald patch. In other cases the fall is more gradual, several days or even weeks elapsing before it has all been cast off; in these instances the disease is noticed to increase its area day by day until the process is arrested. The ultimate size of the area is sooner or later determined, after which it rarely increases. It is this characteristic which distinguishes the affection from other forms of baldness. Sometimes, however, the fall of hair is irregular. Where several patches exist, they will usually have been formed one after the other rather than at the same time, so that hair may be falling from one region or another for weeks or months. The disease may continue months or longer, its duration varying exceedingly. In young persons, however, it almost always terminates sooner or later in recovery. In adults and elderly persons the prognosis is not so favorable. Months or years may elapse before complete recovery sets in; while

in some cases the hair never returns. When repair sets in, it usually progresses rapidly, the hairs appearing first as lanugo and then growing as in the case of other new hair. Relapses may occur. In other cases, however, the new growth takes place irregularly, and is at first weak and pale or mixed as to color, and assumes its former character only by degrees.

The subjective symptoms are usually negative; as a rule, neither itching, burning, nor pain is present. The patient is in the majority of instances first made aware of the condition by the quantity of loose hair and the appearance of the bald patch. In some cases, however, the fall of the hair is preceded by itching, in other cases by soreness or pain.

Etiology.—The causes of the disease are not always understood. It occurs in both sexes, and is encountered among the wealthy and the poor. According to the statistics of the American Dermatological Association, 96 cases were reported out of 16,863 cases of skin disease. It is non-parasitic in its nature, and is not contagious. The origin is beyond doubt to be found in a peculiar functional nerve disturbance, causing impaired nutrition. It has been noted to follow injuries, neuralgias, sudden nervous shocks, fright, and debility resulting from various causes.* The disease is, moreover, known to occur in connection with other affections of a markedly neurotic character, as morphœa. It has also been noted to follow epilepsy. In many cases, however, no appreciable cause for the attack can be assigned.

Pathology.—The fall of the hair must be viewed as due to a state of perverted innervation. The disease may therefore be regarded as a trophoneurosis. The suddenness of the attack, an important feature in the history of many cases of the disease, can be accounted for only by regarding the nervous system as at fault. The whole process, indeed, frequently takes place in so short a time as to be unexplainable upon any other theory than that of want of nerve power. The pale atrophic condition of the patch also points strongly to the disease being due to this cause.

It is from a study of both hair and scalp that a knowledge

* Numerous instances of the kind are on record. See New York Med. Record, 1880, vol. i. p. 694; Lancet, 1881, vol. i. p. 951; Virginia Med Monthly, 1881, p. 937.

of the nature of the disease is to be gained. For microscopical examination of the hairs, either those which have fallen at first, or the short, stumpy ones that may at times be found about the periphery of the patch, will be found suitable. They terminate at the root abruptly in a pear- or club-shaped extremity, instead of the long, thick bulb observed in healthy hairs. The bulb is contracted or atrophied. The root above the bulb retains its normal appearance, with the exception of being diminished in size. In the shaft, however, may be noticed, as the free end is approached, an even and gradual distention, terminating in an oval swelling, or bulging, close to the end of the hair, which tapers and finishes sometimes in a broken extremity. If the long hairs immediately about the border of the patch be examined, the same atrophied, shrunken bulb is observed, though in a less marked degree. This atrophied condition is also seen in hairs that have lived their normal life; in one case it is disease, and in the other a natural process. In alopecia areata, instead of the normal death of the hair we have a sudden arrest of nutrition, and a rapid wasting and atrophy in consequence. The bulging or oval distention of the shaft at its end may be explained as follows. The shaft not receiving its proper nourishment from the papilla, its extreme end suffers most. The filaments, not being sustained as usual, and losing their vitality, tend to separate, thus stretching the epidermic membrane and causing the appearance described.* Jamieson† examined a piece of skin removed from a young man, but was not able to find any morbid changes in the sebaceous glands or hair-follicles, nor in the corium or subcutaneous connective tissue.

Diagnosis.—Alopecia areata is most frequently confounded with tinea tonsurans; although the suddenness of the attack, the more or less complete baldness, the absence of desquamation, the whiteness and smoothness of the patch, should enable it to be distinguished from this disease. Difficulty can arise only in old cases of tinea tonsurans, where the short, characteristic hairs have disappeared; but even here more or less desquamation invariably exists. Tinea tonsurans begins as a small patch and spreads gradually and

* See a paper by the author in Amer. Jour. of Med. Sci., July, 1870. Also an article by Duckworth, St. Bartholomew's Hospital Reports, vol. viii.

† Edin. Med. Jour., March, 1879.

often slowly about its periphery; the whole process in alopecia areata takes place, as a rule, in a short time, after which it usually remains at a stand-still. A history of contagion is generally found in tinea tonsurans. The microscope should always be employed in cases of doubt; it determines the matter indisputably. The appearances found in the two diseases are very different: in alopecia areata there are distinct signs of atrophy of the hair, especially noticeable about the root, unaccompanied by fungus; in tinea tonsurans the trichophyton parasite, consisting of chains of spores and threads of mycelium, is present and easy of detection. It may be known from tinea favosa by the absence of the characteristic yellowish crusts, and in the later stage of the disease by the absence of cicatricial tissue. Vitiligo is scarcely to be confounded with the disease under consideration, for it is an affection of the pigment system only, and is unaccompanied by loss of hair. If it occur upon the hairy parts of the body, the hairs may be deprived of their color, but are not cast off. It is commonly a disease of the non-hairy parts. Alopecia areata may be diagnosed from other forms of alopecia by its peculiar symptoms.

Treatment.—The results from the remedies which are used in the treatment of this affection are exceedingly variable, their reputed success in many instances depending more upon the short duration of the disease in the case under treatment than upon their efficacy. Both internal and external remedies may be used with advantage. Internal treatment, however, I consider of the most value. It should be persevered with. A general tonic treatment, consisting of arsenic, iron, quinine, or cod-liver oil, should be prescribed. They are our best remedies, and, judiciously employed, are in many cases of undoubted value. Arsenic is especially serviceable. The general condition in obstinate cases should be carefully looked after, and the treatment directed accordingly.

The various external remedies which have been recommended are all more or less stimulating in their action. Alcohol, cantharides, the essential oils, glycerine, castor oil, carbolic acid, tar, iodine, turpentine, ammonia, salts of mercury, veratria, acetic acid, tannic acid, nux vomica, pepper, and sulphur may be mentioned as the most useful remedies. They may be employed in the form either of ointments or of lotions, in sufficient strength to produce a stimulant or rubefacient effect, once or twice daily, as occasion may

require. As a rule, strong preparations are tolerated. Among the mercurials the oleate will be found the most valuable, used from ten to thirty per cent. strength, and perfumed with one or several of the essential oils. Chrysarobin, well spoken of by Hutchinson, may also be employed in the form of an ointment, as in psoriasis. Before making the application the scalp should be washed with water and soft soap, dried with a coarse towel, and brushed with a stiff brush until moderately stimulated. No fears need be entertained as to the production of increased baldness; for, after the patches have formed, the remaining hairs are generally firmly seated. Blistering the patches, by means of a cantharidal vesicating fluid, is also serviceable, repeated from time to time, according to the sensibility of the scalp. Alcohol constitutes the basis of most of the fluid formulæ. Carbolic acid with alcohol is frequently employed by the writer, as follows:

R Acidi Carbolici, fʒi;
 Alcoholis, fʒi, ʒvi;
 Ol. Ricini, fʒii;
 Ol. Amygdal. Amar., gtt. x.
 M.

Cantharides, in the form of an ointment or as tincture, is likewise valuable. As an ointment it may be prepared in the strength of from one to three drachms to the ounce. The following formula contains several desirable ingredients:

R Tinct. Cantharidis,
 Tinct. Capsici, aa fʒiss;
 Olei Ricini, fʒii;
 Aquæ Cologniensis, fʒi.
 M.

Aqua ammoniæ has long been esteemed of service. Wilson and Duckworth both speak well of it, the former frequently employing it as follows:

R Olei Amygdalæ Dulcis, fʒi;
 Liquoris Ammoniæ Fort., fʒi;
 Spiritus Rosmarini, fʒv;
 Olei Limonis, fʒi.
 M. Ft. lotio.

Wilson also recommends frictions with a liniment composed of

equal parts of liniment of camphor, ammonia, chloroform, and aconite. Erlach and Duckworth have again brought to notice oil of turpentine, which they consider valuable. It is to be rubbed into the patch with a stiff brush once or twice a day until the scalp becomes sensitive. Tilbury Fox recommends vesication of the patches, and the following lotion :

R Tinct. Nucis Vomicæ, fʒss;
 Tinct. Cantharidis, fʒvi;
 Glycerinæ, fʒii;
 Aceti Destillati, fʒiss;
 Aquæ Rosæ, fʒiii.
 M. Ft. lotio.

Hebra and Kaposi make use of the ethereal oils, especially the oil of mace, and of the stimulating alkaloids with alcohol. Rindfleisch recommends equal parts of tincture of pepper and glycerine. Electricity is also a well-known remedy, and in stubborn cases is well worthy of a trial.

Prognosis.—As regards the time which the disease may continue, no opinion can be given. Occasionally recovery sets in shortly after the fall of hair; at other times months or years will elapse before this takes place. The younger the patient, the more favorable the prognosis. In rare cases the hair is never completely restored. As a rule, in young persons, no apprehension as to permanent baldness need be entertained. The individual should be encouraged to persevere in the treatment, with a view to hasten the cure and at the same time to guard against dependency, which is apt to occur.

ATROPHY OF THE HAIR.

Syn., Atrophia Pilorum Propria.

Atrophic alterations in the structure of the hair take place as the result of various diseases of the scalp, as seborrhœa and the parasitic diseases; and also as the result of impaired nutrition following certain constitutional disorders, as syphilis, fevers, etc. In these cases the atrophy is symptomatic. It may attack a part or the whole of the hair-substance, and is usually characterized by diminution of size, dryness, brittleness, and a tendency to separate and split up into its components. Idiopathic atrophy of the hair,

independent of disease in other structures of the skin, also occurs, as in the following affections:

FRAGILITAS CRINIUM.—Fragility of the hair is marked by a brittle state of the hair-shaft. The common form is that in which the shaft of the hair, either of the head or beard, shows irregularities and uneven formation in structure, being at one point thinner than at another. In addition to this imperfection, the free ends manifest a disposition to split into filaments. It may occur as a slight abnormality, or, on the other hand, to such an extent as to render the crop of hair markedly defective.

Another form of atrophy of the hair of the beard has been described by me,* characterized by marked atrophy of the hair-bulb and splitting of the hair-substance, the fission taking place within the follicle and producing irritation of the skin. The atrophy occurs at the bulbs, and the hairs immediately separate into a variable number of stalks, which assume various shapes and become often greatly enlarged. The curious feature is the atrophy of the bulb and the apparent hypertrophy of the shaft. It is not parasitic.

TRICHOREXIS NODOSA.—Another variety of fragility of the hair, first described by Beigel,† and designated by him “swelling and bursting of the hair,” and more recently by Kaposi‡ with the name *trichorexis nodosa*, consists in the formation of a series of small, spindle-shaped, bulbous swellings, situated at irregular intervals along the shaft of the hair. They are met with chiefly on the beard and moustache, but also upon the scalp, and more rarely on other regions. They possess a shining, somewhat transparent appearance, and look not unlike the ova of pediculi. The hairs readily rupture or break entirely off at the points of distention, and leave a bristly, brush-like stump, composed of jagged filaments. Devergie has also described and reported two cases of the same affection under the name of *tricoptilosis*.§ Cases are also

* Amer. Jour. of Med. Sci., July, 1878 (with wood-cut).

† Sitzungsber. der k. Akad. der Wissenschaft, 1855, Bd. xvii. p. 612. The disease was also described by Wilks at about this time in his “Lectures on Pathological Anatomy.”

‡ Hebra and Kaposi, loc. cit., vol. iii. p. 244.

§ Annales de Derm. et de Syph., No. 1, 1871, 1872. Translated in Amer. Jour. of Syph. and Derm., vol. iii. p. 254.

reported by Billi,* Roeser,† Schwimmer,‡ Sherwell,§ and S. Kohn.|| The affection may give rise to considerable disfigurement. The cause is unknown. It is not due to a vegetable parasite. According to Kohn, the appearances are produced by desiccation of the medullary substance of the hair, accumulation of air in the same, and consequent distention, and, finally, rupture, of the hair-substance. Shaving and cutting the hair constitute the best methods of treatment, though in the cases reported but little benefit has followed either this or any of the other remedies suggested.

W. G. Smith, of Dublin,¶ has reported a "rare nodose condition of the hair," which I think may be viewed as a variety of trichorexis nodosa. The case was that of a girl aged nineteen, who had partial loss and general thinning of the hair of the scalp. The shorter hairs presented a regular succession of numerous distinct, fusiform, opaque swellings along the shaft, beginning immediately above the root, like beads on a necklace, one node on an average existing on each millimetre of hair. There was no rupture of the hair at the nodes, fracture, when it occurred, always taking place between the swellings. Brown pigment was found abundantly in the nodes, the internodular portion being devoid of pigment, and thus the hairs viewed with the naked eye presented the appearance of being checkered and were alternately brown and white. No fungus could be found. The affection differs in several particulars from the usual form of trichorexis nodosa.

PIEDRA.—Under this name another disease bearing resemblance in external form to trichorexis nodosa has been described by Desenne** and by Morris.†† It is met with in the province of Cauca in Colombia, and consists of a variable number of small nodosities, visible to the naked eye, which are found seated along the shafts of the hair, some surrounding the hair completely, others on one

* Giornale Ital. delle Mal. ven. e della Pelle. Milano, Agosto, 1872.

† Annales de Derm. et de Syph., No. 3, 1878.

‡ Viertelj. für Derm. u. Syph., Heft 4, 1878.

§ Arch. of Derm., July, 1879.

|| Viertelj. für Derm. u. Syph., Heft 4, 1881.

¶ Brit. Med. Jour., May 1, 1880.

** Comptes-Rendus, Juillet 1, 1878 (quoted by T. Colecott Fox, Lancet, Dec. 7, 1878, p. 804).

†† Lancet, March 22, 1879, p. 407; also Chéadle and Morris, Lancet, Feb. 8, 1879, p. 190 (with wood-cut).

side only. They are remarkably hard and gritty. Desenne and Morris regard the formation as a fungous growth existing on the exterior of the hair. Morris states that under the microscope the nodes are seen to consist of a "honeycombed mass of pigmented spore-like bodies," the whole mass arising from one cell which buds forth in all directions. The affection is not contagious, and is supposed to be due to the use of a peculiar oil by the natives. It is found upon the hair of the head, and chiefly among women. The hair is said to have an acid smell. A similar growth is described and figured by Beigel, in his work on the hair,* as the "chignon-fungus."

There seems to be still another disease presenting similar features, an instance of which is described by Hoggan,† where the nodes upon rupture give out masses of bodies resembling fish-roe or the spores of a fungus. The nature of the bodies does not seem to be as yet established. The affected hair (of the beard and moustache), which had been white, turned brown.

ATROPHY OF THE NAIL.

The condition may be congenital; much more commonly, however, it exists as an acquired affection. It is characterized by a deficient development or growth of the nail-substance, which is either smaller or thinner than normal; or brittle and split; or soft and crumbly, according to the cause. The color may be pale, whitish and opaque, or dark. The so-called "worm-eaten" condition of the nail, due to varied causes, is generally of an atrophic nature. Atrophy of the nail may occur as a strictly local affection, or in consequence of injury or disease of the nerves, or of some general disease, as, for example, syphilis. Certain diseases of the skin, as eczema and psoriasis, attack also the nails, producing atrophic lesions. The fungi met with upon the skin likewise occasionally invade the nail, causing deficient growth or partial destruction of the structure. The nails are also subject to injurious external influences which may interfere with their proper development.

* The Human Hair. London, 1869.

† Lancet, Sept. 7, 1878.

CLASS VII.

NEOPLASMATA—NEW GROWTHS.

IN this class are grouped a large number of important diseases, which, although differing in many instances in appearance and external characters, consist pathologically of a new growth in the skin. The neoplasm may be made up of connective tissue, as in the case of keloid, molluseum fibrosum, and xanthoma; of a cellular deposit, as in lupus erythematosus, lupus vulgaris, syphilis, eareinoma, etc.; of bloodvessels, as in vascular nævus; or of lymphatics or of nerves, as in lymphangioma and neuroma.

The neoplasmata, clinically, are either benign or malignant in their nature. The connective-tissue growths may be said to be benign; while certain of the cellular formations, as, for example, leprosy and cancer, are characterized by malignancy, completely destroying the tissues which they attack, and at times life. According to their nature are they unattended by or accompanied with pain. The majority are not of a painful nature. They pursue a chronic course, ordinarily lasting throughout life; sometimes, as in syphilis and cancer, they run a comparatively rapid course. In many instances they are amenable to operative interference. Their general pathology has been already referred to.

KELOID.

Syn., Kelis; Kelos; *Fr.*, Cheloïde.

KELOID IS A CONNECTIVE-TISSUE NEW GROWTH, CHARACTERIZED BY ONE OR MORE IRREGULARLY SHAPED, VARIOUSLY SIZED, ELEVATED, SMOOTH, FIRM, SOMEWHAT ELASTIC, REDDISH CICATRIFORM LESIONS.

Symptoms.—The disease usually commences as a small, pea or bean sized, pale tubercle or nodule firmly implanted in the skin. It increases in size, as a rule, slowly, years often being necessary

for its development as commonly encountered. The form of the tumor is generally peculiar. It is made up of a central portion or body, together with several or numerous prolongations extending into the healthy skin; at other times it consists of a circumscribed growth terminating abruptly against the sound tissues. The shape is exceedingly variable; it may be ovalish, elongated, cylindrical, crab-shaped, fungoid, or even in the form of streaks and broken lines. It is, indeed, remarkable for the irregularity of its shape. In size it likewise varies; it may be pea or bean sized, or as large as a hand. Not infrequently it is about the size of a thumb. The outline is generally well defined, the disease appearing to be half embedded in the tissues. It is more prominent about its centre, tapering off towards the periphery. It is elevated, usually from one to two or three lines. Its surface is smooth and is generally devoid of hair. Taken between the fingers it has a firm, dense, slightly elastic feel. Its color is pinkish or reddish, often streaked, with usually a shining appearance.

One, several, or many growths may exist; commonly, however, but one is present. The usual seat is upon the trunk, more particularly about the sternal region. Occurring here, the disease is apt to extend itself laterally, parallel with the ribs, sending out its prolongations in all directions. It is also encountered upon the mammæ, neck, ears, arms, and other regions. More or less pain, and sometimes itching, often accompany the growth; but neither of these symptoms is by any means constant. Pain is more especially noticeable upon pressure. The course of the disease may be either rapid or slow; having attained a certain growth, it is apt to remain stationary. It is never attended with ulceration. It usually exists throughout life; occasionally, very rarely, it undergoes spontaneous involution.

Etiology.—Keloid may arise spontaneously, in which case it is termed *spontaneous keloid*. It may also spring up at the site of various injuries to the skin, when it is called *cicatricial keloid*. This variety is frequently met with as the result of burns by fire or chemicals, cuts, flogging, and wounds of all kinds.* It is sometimes seen occupying the site of former leech-bites, and also acne

* A remarkable growth of cicatricial fungoid keloid in a negro is reported by Dr. Maury in *Phot. Rev. of Med. and Surg.*, Oct. 1870.

and variola lesions, and not infrequently where the ears have been bored about the canal. The difference between the two forms is one depending alone upon the cause which has occasioned their appearance; microscopically they are identical in structure. The disease is encountered in both sexes, and usually appears in early adult or middle life. It is much commoner in the colored than in the white race. According to the statistics of the American Dermatological Association, 24 cases were encountered out of 16,863 cases of skin disease. No cause can be ascribed to the spontaneous variety.

Pathology.—Studies relating to the anatomy of keloid have been made by Langhans,* Warren,† Kaposi,‡ and Schwimmer.§ The growth is made up of a dense, fibrous mass of tissue, whitish in color, having its seat in the corium. Microscopic examination shows in some cases the horny and mucous layers of the epidermis to be normal. On the other hand, Schwimmer in idiopathic keloid records atrophy of the epidermis; also the formation of peculiar vesicles and nuclei, the disappearance of the papillæ, and atrophy of the hair-follicles and sebaceous glands. The whole corium is occupied by a new formation, consisting of bands of connective tissue, arranged generally parallel to the surface of the growth. The fibres are closely packed together and form a dense mass. Cells, as a rule, are rarely encountered, except along the course of vessels, especially the arteries, where they are found in layers about the walls; they are nucleated and spindle-shaped, and are seen to best advantage in the more recent portions of the growth. It has been shown by Warren that the disease has its starting-point in the walls of the vessels.

Diagnosis.—The symptoms of keloid are so striking in character that no difficulty is experienced in the diagnosis. It is most liable to be confounded with simple cicatrix, from which, however, it may be known by its color, outline, elevation, and consistence, and frequently by the presence of pain. The disease has nothing in common with the so-called Addison's keloid, which is now known as morphea.

* Virchow's Archiv, Bd. xl. p. 334.

† Sitzungsber. der k. Akad. der Wissenschaft, 1868.

‡ Loc. cit., vol. iii. p. 281.

§ Abstract in Phila. Med. Times, Sept. 10, 1881.

Treatment.—This is usually unsatisfactory, for operative interference by means of caustics or the knife is almost invariably followed by return of the disease, and frequently in an exaggerated form. Vidal* speaks favorably of multiple scarification in parallel and transverse lines, reporting several cases in which marked improvement had taken place, the operation having been originally undertaken with the view of relieving the pain. Caustic potash offers the most efficient remedy if an operation be demanded; but this should not be entertained if the disease is increasing. To allay the pain which is at times present, hypodermic injections of morphia into the part are particularly useful. Chloroform and anodyne ointments may also be prescribed for the same purpose. With the view of promoting absorption, iodine, and lead and mercurial plasters, are the best remedies. Wilson† advises painting the growth with a solution composed of one drachm of iodide of potassium, an ounce of soft soap, and a like quantity of alcohol, followed by the constant application of lead plaster spread on a piece of soft leather. I have derived benefit from the use of the plaster alone.

Internally, iodide of potassium and arsenic have been recommended; it is doubtful, however, whether they exercise any influence over the growth of the disease. Quinine is said to be of use in arresting the paroxysmal pains.

Prognosis.—Spontaneous involution occasionally occurs; but this event is rare. Not infrequently, having attained a certain size the tumor ceases to develop. Its course, as a rule, is that of progression, attended at times by temporary arrest of development.

MOLLUSCUM FIBROSUM.

Syn., Fibroma Molluscum; Molluscum Simplex; Molluscum Pendulum.

MOLLUSCUM FIBROSUM IS A CONNECTIVE-TISSUE NEW GROWTH, CHARACTERIZED BY SESSILE OR PEDUNCULATED, SOFT OR FIRM, ROUNDED, PAINLESS TUMORS, VARYING IN SIZE FROM A SPLIT PEA TO AN EGG OR LARGER, SEATED BENEATH AND IN THE SKIN.

Symptoms.—These growths occur either singly, or, as is more apt to be the case, in large numbers, when they usually occupy

* Gazette des Hôpitaux, Jan. 29, 1881, p. 94.

† Lectures on Dermatology. London, 1875.

the greater part of the body. They generally assume various forms and shapes upon the same individual: at times they are semiglobular in shape, and are seated in the skin itself or in the subcutaneous tissue; while in other cases they are pedunculated, club-shaped, and hang from their pedicles. In consistence they are, as a rule, uniformly soft, but when taken between the fingers are generally found to have a variable amount of body, the larger ones having a somewhat elastic, fibrous feel. They are circumscribed or ill defined according to their form. The skin covering them is smooth and normal, pinkish or reddish in color, differing somewhat in structure and color according as the tumor is large or small, sessile or pedunculated. It may be loose or stretched; hypertrophied or atrophied.

The size of the tumors varies exceedingly. Where multiple, they are usually pea or cherry sized, with here and there larger ones varying from a walnut to a pear. Various sizes and forms are generally present. If single, they are apt to be pedunculated and to attain considerable size, sometimes weighing many pounds. As to numbers, when multiple, in marked cases, they ordinarily exist in hundreds, occupying the greater part of the surface without regularity of distribution; they have preference, however, for the softer tissues, and consequently develop extensively about the trunk. They are never attended with pain, although at times their great size and weight render them a source of extreme discomfort.* They may make their appearance at any time during life, often in childhood, and grow more or less rapidly, either steadily or interruptedly, throughout life. Having attained a certain size, they usually remain stationary; large, pendulous tumors occasionally ulcerate, as in the case of other heavy growths.†

Etiology.—The disease is encountered in both sexes and in various races. The statistics of the American Dermatological

* Well-marked examples of the disease, with portraits, reported by Drs. Oeterlony and Wigglesworth, may be found in the Archives of Dermatology, July, 1875, and April, 1876.

† A benign growth, similar in character to fibrous molluscum, but containing also adipose tissue, in the form usually of a single, pea-sized, hemispherical, soft, fleshy tumor, is met with on the face and trunk of middle-aged and elderly persons. Its growth is slow, and, having assumed its determinate size, it remains without undergoing change. Mr. Wilson designates it "aerochondron." (See Lectures on Dermatology, London, 1871, p. 98.)

Association show 9 cases only out of 16,863 cases of skin disease; but the disease is of more frequent occurrence than these figures indicate. The cause is unknown. Hebra has made note of the fact that all of the patients with this affection who have from time to time come under his notice were remarkably stunted in physical as well as in mental development. The observation has been verified by others, and by myself.* The general health of the patient does not suffer. The disease may be inherited, and may, moreover, manifest itself in several children of the family.†

Pathology.—The internal structure of molluscum fibrosum will be found to differ somewhat as the tumor is small or large, recent or old. A section made through the long axis of one which is fully developed shows it to consist of a whitish, fibrous mass, from which upon pressure a small quantity of yellowish fluid can be made to exude. The growth is dense and compact about its base, and is here seen to be made up of coarse, irregular bands of fibrous tissue. In the centre it is soft and pulpy, while about the periphery the fibres are finer and partake more of the structure of the corium. No lines, however, mark these differences. These tumors cannot be enucleated, for they are firmly bound down by their pedicles to the subcutaneous tissue. Old growths, which have assumed a dense fibrous character, are, as a rule, less adherent to the corium, and may, therefore, more readily be dissected out. The attachments at the base, however, are always secure. Under the microscope, small, recent tumors are observed to be made up of gelatinous, young connective tissue. The cells are to be seen more particularly about the periphery, and are traversed by bundles of fine fibrillæ. Older tumors consist in great part of firm, dense, fibrous tissue, closely packed together. When large, the tumors are somewhat vascular about the bases. According to Rokitsansky and others, molluscum fibrosum starts in the connective tissue of the deeper layers of the corium. Virchow holds that they take their origin in the connective tissue surrounding the fat globules,—a view which is likewise entertained by Kaposi,‡ and to which I incline.

* Phila. Med. Times, March 18, 1876; also in other cases.

† See a paper, reporting two cases, by Dr. I. E. Atkinson, N. Y. Med. Jour., Dec. 1875; also a report of three cases by Murray, Lancet, March 22, 1878.

‡ Path. und Ther. der Hautkrankheiten. Wien, 1880.

Diagnosis.—No difficulty, as a rule, presents itself in arriving at a diagnosis. The tumors are to be distinguished from those of epithelial molluscum by the fact that they do not possess any depression or aperture upon their summits. They are, moreover, situated beneath the skin, which structure generally appears normal, whereas the epithelial tumors are superficial, and stand forth prominently, covered by skin which is usually thin and stretched. They are, moreover, not to be confounded with multiple neuromata of the skin, from which they may be known by the absence of pain; nor with lipomatous growths, which are soft and lobulated in structure.

Treatment.—When not too numerous, they may be excised by the knife, as in the case of other tumors of a similar nature. If large and pedunculated, they may be ligated or removed by the galvano-cautery.

Prognosis.—The affection is one which lasts throughout life. Occasionally spontaneous involution takes place on the part of some of the lesions. The tumors either continue to increase in size and number, or, having attained a certain development, become arrested in their growth and production.

XANTHOMA.

Syn., Xanthelasma; Vitiligoidea; Molluscum Cholestérique (Bazin); Fibroma Lipomatodes (Virchow).

XANTHOMA IS A CONNECTIVE-TISSUE NEW GROWTH, CHARACTERIZED BY THE FORMATION OF YELLOWISH, CIRCUMSCRIBED, IRREGULARLY SHAPED, VARIOUSLY SIZED, NON-INDURATED, FLAT, OR RAISED PATCHES OR TUBERCLES.

Symptoms.—Two varieties of the affection are encountered; the macular (XANTHOMA PLANUM) and the tubercular (XANTHOMA TUBEROSUM). In the first variety the disease consists of pea-sized or larger, usually elongated patches, having their seat in the corium. They are on a level with the surrounding skin or are slightly raised, and often have the appearance of being inlaid. They are usually sharply defined; possess a smooth surface; and to the touch are soft and apparently normal in texture. In shape they are either roundish or elongated; occurring upon the eyelids, they commonly assume the form of narrow semicircular patches, two or

three lines in width, often extending from one canthus to the other. In color they are yellowish, the shade varying from buff to orange. Sometimes they have a pale, whitish-yellow, or creamy color. They are opaque, and resemble patches of chamois-skin. One, two, or more may exist, situated either closely together, as about the eyelids, or in different regions. They may coalesce. They begin as small pin-head or pea sized formations, and increase in size, as a rule, slowly, in the course of years. The common seat of this variety is about the eyelids, especially the upper; but it is also seen occasionally upon other portions of the face, as well as upon the body. The patches seldom give rise to any inconvenience.

The tubercular form shows itself as pin-head, pea, or larger sized, roundish, raised patches or tubercles. In general characters the lesions do not differ materially from those of the flat variety. They are, however, seldom encountered upon the eyelids, but usually develop upon the neck, body, and extremities. They are sometimes slightly painful. Both forms may occur together.

The disease is encountered usually in middle or advanced life. Sometimes, however, it is met with in the young, as in a case of the multiple form of the disease reported by T. Colcott Fox,* where it began in the second year. The lesions may be single or few or, on the other hand, numerous. The multiple form (XANTHOMA MULTIPLEX) is rare. In the majority of cases the disease manifests itself on the eyelids in the macular form, beginning at the inner canthus. Next it invades the palms and soles, face, ears, flexures of the joints, extremities, and lastly the trunk. It may also affect the mucous membrane, the macular form occasionally invading the lips, gums, tongue, palate, and trachea. Similar opaque patches have been found in the spleen and lining membrane of the bile ducts. The disease in almost all cases develops gradually; runs a slow course; and usually continues throughout life. Rarely, it develops rapidly, as in Korach's† case of universal xanthoma planum et tuberosum, which manifested itself with icterus and pruritus in the course of a few weeks. After a year the icterus disappeared and the xanthoma faded considerably. It may disap-

* Lancet, Nov. 8, 1879.

† Deutsche Med. Wochenschr., No. 23, 1881. Abstract in Phila. Med. Times, Aug. 27, 1881.

pear spontaneously, as in the instances reported by Fagge,* W. F. Smith,† and Legg.‡ It is more common in women than in men.

Etiology.—The causes are obscure. In a number of the reported cases jaundice had occurred previously or was present. In many cases, however, no history of jaundice or of liver disease can be found. In the multiple form of the disease, according to Pye-Smith, there is usually a history of jaundice, often due to an organic cause, although Fox§ and Carry|| have recently recorded instances in which there was neither antecedent disease of the liver nor jaundice. Pye-Smith¶ and Tilbury Fox** both express the opinion that the disease is probably due to the circulation of bile-pigment in the blood. This statement, however, cannot be accepted for all cases. White†† refers to ten cases, observed by himself, in which no such cause could be assigned; and my own experience has been the same. Xanthoma palpebrarum, the macular form, is seldom associated with jaundice.

Pathology.—The disease is a connective-tissue new growth with fatty degeneration, a view entertained by the majority of those who have investigated the subject, among whom Pavy,‡‡ Smith,§§ Fagge, Waldeyer,||| Virchow,¶¶ and Kaposi*** may be mentioned. Pye-Smith,††† who also has carefully studied the disease, concludes that it "consists anatomically in a chronic hyperplasia of the deeper layer of the cutis, in which the papilla and epidermis on the one hand and the subcutaneous connective tissue on the other are only secondarily involved. The process may run in two directions. When it follows what may be called the inflammatory type, the minute, round, inflammation-cells or young leucocytes never form true tissue elements, molecular fatty degeneration rapidly overtaking them, and leading to their ultimate disappear-

* Trans. Lond. Path. Soc., vol. xix.

† Lancet, Oct. 25, 1879.

‡ Annales de Derm. et de Syph., 1880, tome i. No. 1.

¶ Trans. Lond. Path. Soc., vol. xxviii.

** Epitome of Skin Diseases. Phila., 1879.

†† Bost. Med. and Surg. Jour., Oct. 23, 1879.

‡‡ Guy's Hospital Reports, 1866.

§§ Journal of Cutaneous Medicine, Oct. 1869.

||| Virchow's Archiv, 1873.

*** Path. und Ther. der Hautkrankheiten. Wien, 1880.

††† Guy's Hospital Reports, 1877.

† Ibid., vol. xxviii.

‡ Lancet, Nov. 8 1879.

¶¶ Ibid., 1871.

ance in a detritus of oil-drops, calcareous masses, and cholesterine crystals." The other course the disease may take approaches the process of formation of a true new growth; the new cells, instead of quickly dying by fatty degeneration, grow to a considerable size and develop processes, so as to form the fusiform and stellate corpuscles of connective tissue. These cells are also liable to fatty degeneration, but the process is slower and less destructive, and resembles the normal transformation of ordinary connective into adipose tissue.

Treatment.—When interference is called for, the only plan of treatment is that of excision, which may be, as a rule, satisfactorily accomplished. In order to avoid ectropion, when the affection is upon the eyelids, care should be taken not to carry the incision around the patch too deeply into the tissues. After removal the edges are to be brought together by stitches, and the case treated as an ordinary wound.

Mention may here be made of COLLOID DEGENERATION of the skin, cases of which have been reported by Wagner,* and more recently, by Besnier.† It is characterized by numerous, disseminated, small, pin-head sized, discrete, rounded, flat or slightly raised lesions, of a pale or bright lemon color. They are shining and translucent, and have the appearance of being yellowish vesicles. Their appearance, however, is deceptive, for they are of firm or solid consistence. When pricked with a needle or opened sufficiently deep to cause bleeding, a whitish or yellowish, transparent, gelatinous substance may be expressed. The disease occurs chiefly upon the face, especially the upper half, about the bridge of the nose, the orbital and temporal regions, and the forehead. It is met with in middle-aged or elderly persons. It may resemble xanthoma, but the lesions differ in being bright and translucent. Wagner regarded the disease as a form of milium which had undergone colloid degeneration, but Besnier has shown that the process is a colloid degeneration of the connective tissue of the corium, having its seat in the upper strata, beneath the papillary

* Das Colloid-Milium der Haut. Archiv der Heilk., 1866, Bd. vii. p. 463.

† Sur un cas de dégénérescence colloïde du derme. Gaz. Hebdom., No. 41, Oct. 10, 1879. Also Annales de Derm. et de Syph., 1879, tome x. Nos. 5-6.

layer, the epidermis, glands, and hair-follicles being involved only secondarily through pressure. The process is purely degenerative.

RHINOSCLEROMA.

RHINOSCLEROMA CONSISTS OF A CIRCUMSCRIBED, IRREGULARLY SHAPED, FLATTENED, TUBERCULAR, REMARKABLY HARD AND DENSE CELLULAR NEW GROWTH, HAVING ITS SEAT ABOUT THE REGION OF THE NOSE.

Symptoms.—The disease was first described by Hebra and Kaposi.* The growth, which may be either roundish or angular in outline, is well defined by an abrupt ridge or line of demarcation, beyond which the tissues are normal. It is more or less elevated above the surrounding skin, and possesses a flattened, plate-like, but uneven surface, caused by the presence of variously sized, isolated, aggregated or confluent tubercles of which the mass is composed. These are either of the color of the normal skin, or are reddish or brownish. The tissues are firmly bound down, as in the case of scleroderma, and cannot be taken up between the fingers; the epidermis is dry, with here and there fissures which secrete a viscid fluid which forms into yellowish, adherent crusts. The growth is exceedingly dense, and may be compared to the hardness of wood or stone. Upon pressure it is slightly elastic, and at the same time painful; at no stage does it appear either inflammatory, swollen, or œdematous. The disease is confined to the nose and contiguous parts. It attacks especially the alæ, the septum, encroaching on the mucous membrane, and the upper lip. Its course is remarkably slow, lasting over a period of years. As it progresses, the induration usually becomes very marked, the alæ narrowing in calibre, so that occlusion may take place. The nodules or tubercles rarely change in their structure, even though they exist for years. Zeissl,† however, reports a case that broke down and ulcerated with suppuration.

Etiology.—Its cause is unknown. It is not due to syphilis. It is encountered in both men and women, usually at middle age. It is a rare disease. Kaposi‡ reports having seen twenty-five

* Wien. Med. Wochenschr., No. 1, 1870.

† Ibid., No. 22, 1880, p. 621.

‡ Path. und Ther. der Hautkrankheiten. Wien, 1880.

cases. It is certainly very rare in this country. I am not aware of any cases having been observed here.

Pathology.—Kaposi* remarks that, on cutting into one of the tubercles of rhinoscleroma, one is surprised at the ease with which the knife makes its way in comparison with the hardness which is apparent to the touch. The cut surface is of a pale-red color, uniformly and finely granular, and bleeds freely. The microscopic anatomy has been carefully studied by this observer, also by Geber,† and more recently by Mikulicz.‡ Kaposi gives the following result of his examinations. The epidermis and rete are normal. The papillæ are filled with small cells closely packed together, the cellular infiltration, here and there, extending deeply into the corium, which is uniformly dense throughout, the vascular stratum and the papillæ being especially crammed full of cells. The cells are smaller, especially in the protoplasm, than the so-called granulation cells usually are, as met with in acute or chronic inflammation of the skin, and also in places where a new growth of connective tissue is taking place. The nuclei of the cells are small and refract light feebly, and are finely granular. The cells appear to be simply lodged in the delicate connective-tissue stroma of the papillæ and the upper layers of the corium, and can easily be removed by manipulation. They are, moreover, well preserved, and have a sharp outline and distinct nuclei, differing in this respect from the degenerative cells of lupus and syphilis. The deeper layers of the corium show a dense connective-tissue felt. The growth, according to Kaposi, must be viewed as allied to the small-celled or granulation sarcoma. The same anatomy is described by Geber and Mikulicz, who, however, interpret the disease as a chronic inflammatory process.

Diagnosis.—The location of the disease, the extreme hardness of the path, the sharp line of demarcation, the alteration in the shape of the nostrils, and its slow course, will usually serve to distinguish it from other affections. It may be confounded with syphilis, keloid, and epithelioma, but upon investigation will be found to differ from these diseases in many particulars.

* Loc. cit., vol. iv. p. 7.

† Archiv für Derm. und Syph., 1872, Heft 4.

‡ Archiv für Klin. Chir., Bd. xx.

Treatment.—The disease calls for interference, for, if permitted to increase, occlusion of the nostrils may occur. It is to be destroyed by means of caustics, the nitrate of silver, potash stick, or pyrogallie acid, being the best remedies. No inflammatory action is set up, nor does the part ever assume a malignant character in consequence of the operation. The disease tends to recur.

Prognosis.—This is unfavorable. It is extremely obstinate, and, without treatment, usually continues a lifetime.

LUPUS ERYTHEMATOSUS.

Syn., Lupus Erythematos; Seborrhœa Congestiva; Lupus Superficialis; Lupus Sebaceus; *Germ.*, Lupus Erythematosus; *Fr.*, Scrofulide Érythémateuse; Érythème Centrifuge.

LUPUS ERYTHEMATOSUS IS A CELLULAR NEW GROWTH, CHARACTERIZED BY ONE OR MORE, CIRCUMSCRIBED, ROUNDED, OVOID, OR IRREGULARLY SHAPED, VARIOUSLY SIZED, REDDISH PATCHES, COVERED WITH GRAYISH OR YELLOWISH, ADHERENT SCALES.

Symptoms.—The disease begins either in the form of a single, usually roundish, circumscribed patch, which, enlarging upon its periphery, increases indefinitely in size; or, in the form of two or three or a number of isolated patches, which gradually approach one another, and coalesce to make one or more larger patches. The lesions, at first, are small, pin-head or pea sized, erythematous spots, which ordinarily make their appearance slowly. They are usually circumscribed from the beginning, and generally exhibit a margin or border covered with grayish or yellowish scales. As a rule, they extend gradually; at times, however, they assume considerable size in the course of a month or two.

When fully developed, the disease consists of one, two, or a number of patches, varying in size from a split pea to a silver quarter dollar or the palm of the hand, having generally a distinctly defined, marginate outline. In shape they are usually roundish or ovalish, but they are often irregular. In color they are reddish or violaceous, the shade varying. The surface is covered with fine or coarse, grayish or yellowish adherent scales. These are usually scanty; at times, however, they are so abundant as to form sebaceous-looking crusts, similar to those met with in seborrhœa of the face. They are firmly attached to the openings of the sebaceous

glands, which are often distended and patulous. The patch spreads upon its margin, the border being well defined, while the central portion usually shows a paler color, slight depression, and a tendency to atrophic change. After a variable time the patch attains a certain size, and may remain stationary. There is never any moisture or discharge in connection with the disease.

The usual seat of the affection is upon the face. The cheeks, especially below the eyes, and the bridge of the nose are most frequently attacked. When these regions are at the same time invaded, the symmetry is ordinarily so marked that the eruption presents an appearance not unlike the form of a bat or butterfly with outspread wings.* The red of the lips, ears, scalp, back, and other parts of the body may likewise be involved. The disease is notable for its chronicity, and may persist through life. It tends to increase from time to time by repeated attacks, at short or long intervals. Ultimately the process generally ends in the formation of a whitish or yellowish, punctate, soft or firm, cicatricial tissue, which may be either superficial or deep-seated.

The subjective symptoms are variable, and depend upon the activity of the disease; as a rule, there is burning or itching, constant or intermittent; while in other cases but slight discomfort is experienced. The general health is usually good, and ordinarily remains so. According to Kaposi, erysipelas, adenitis, and subcutaneous swellings of a peculiar character may complicate the disease. I have never encountered such symptoms.

Etiology.—The causes are obscure. It is one of the rarer diseases of the skin. According to the statistics of the American Dermatological Association, 43 cases were encountered among 16,863 cases of skin disease. Females are more liable to it than males. It seldom occurs before puberty, differing in this respect from lupus vulgaris. It attacks persons of all temperaments, but is most commonly met with in those with light skin and hair, and notably upon those who are subject to disorders of the sebaceous glands. Not infrequently it originates in causes similar to those which produce seborrhœa; it is well known that lupus erythematosus may begin as a localized seborrhœa.

Pathology.—The disease possesses the nature both of an inflam-

* See Plate C in my Atlas of Skin Diseases.

mation and of a new growth. It occupies a position possibly between the two pathological classes of disease. In the light of recent observation it is regarded by some as a chronic inflammation of the eutis, leading to degeneration and atrophy. As a rule, it has its seat primarily about the sebaceous glands and follicles. Hebra first pointed out that the disease had its chief seat here, and gave it the name "seborrhœa congestiva," which, however, is now known to be the case only in certain instances. Kaposi* and Thin† have shown that the sweat glands as well as the sebaceous glands may be the seat of the disease, while, according to Geber‡ and Stroganow,§ all the structures and every layer of the skin, even to the subcutaneous connective tissue, may be, at one time or another, the seat of origin and the chief centre of the morbid process.

In recent foci of disease are found not only collections of cells about the follicles and glands, together with the usual histological signs of inflammation, but also, according to Kaposi, dilatation of the vessels, œdema, cell-infiltration of the connective tissue, and proliferation of connective-tissue corpuscles. They may occur in the lower portion of the corium or in the most superficial parts. The effect of these histological changes is seen in the proliferation of the gland cells, giving rise to seborrhœa, the infiltration and swelling of the skin and the desquamation of the epidermis forming clinical features of the disease. If retrograde metamorphosis take place in the earlier stages of the pathological process, the cell-infiltration is absorbed and the patches disappear without leaving any trace behind. Usually, however, the inflammatory changes lead to degenerative metamorphosis in the affected tissues, resulting in absorption and atrophy. When the glands and hair-follicles are involved, cicatricial atrophy results.

Diagnosis.—When fully developed, the patch offers such a striking picture that there is little danger of confounding it with any other disease. The region attacked, generally the face, and usually the cheeks and nose; the circumscribed, roundish, reddish

* Path. und Ther. der Hautkrankheiten. Wien, 1880.

† Med.-Chir. Trans., vol. lviii., 1875.

‡ Viertelj. für Derm. u. Syph., III. Jahrg., 1876, Heft 1.

§ Centralbl. für Med., 1877, No. 48.

patch with a border; the adherent, grayish or yellowish scales; and the slow course, all point directly to the disease.

It is to be distinguished from lupus vulgaris by the absence of papules, tubercles, and ulceration. In lupus erythematosus the openings of the sebaceous glands are generally enlarged; they are not affected in lupus vulgaris. Lupus erythematosus rarely shows itself before puberty; lupus vulgaris usually appears in childhood. Lupus erythematosus is a comparatively superficial disease; lupus vulgaris is deep-seated, and attended sooner or later with ulceration and disfiguring cicatrices. Psoriasis may at times bear some resemblance to lupus erythematosus, but may be distinguished by its course, as well as by symptoms peculiar to it. The disease cannot well be mistaken for syphilis; its characteristic features, history, and course will prevent such an error.

Treatment.—The disease is, as a rule, remarkably rebellious to the influence of therapeutics. Internal remedies are to be selected to meet the needs of the case. At times patients are otherwise in perfect health, in which case external treatment alone is to be relied upon. In some cases iodine and arsenic may be used with advantage. Iodized starch is recommended by McCall Anderson. It is made in the proportion of twenty-four grains of iodine to one ounce of starch, the iodine being triturated with water and the starch gradually added. The dose is a teaspoonful or more. Iodide of potassium may also sometimes be prescribed with benefit. Cod-liver oil, in some instances, will be found to exert a marked influence upon the disease, especially in those cases where there is a tendency to impaired general nutrition.

The external treatment will, however, as a rule, be found to be of the greatest value. In the milder forms of the disease it must be remembered that the patches sometimes disappear spontaneously, leaving little or no scar, and that therefore no local measures should be employed likely to lead to more disfigurement than would be caused by the disease itself. Stimulating and caustic applications are followed, as a rule, by the best results. Among the remedies employed, *sapo viridis* occupies a prominent position. In mild cases the disease may occasionally be relieved by this means alone. It may be applied spread upon a cloth, in the form of a plaster. It may also be used with water. In combination with alcohol, two parts to one of alcohol, it is even of greater

value. The patch is to be well rubbed and washed with it until the scales have been completely removed, when a weak glycerine lotion or simple ointment may be applied; in some cases it is expedient to make no after-application. Apart from the remedial effect, the soap serves as an admirable means of cleansing the patch for further treatment.

Oleate of mercury, five or ten per cent. strength, I have found valuable. Mercurial ointment is of service in some cases, prepared as a plaster and applied continuously. Sulphur at times proves very serviceable, in the form of an ointment, a drachm or more to the ounce, especially when used in conjunction with soft soap. It is of more value than is generally supposed. In acute superficial cases, attended with heat, the alcoholic sulphur lotions referred to in acne are useful. Chrysarobin and pyrogallie acid may also be referred to, and have been used with success in the form of ointments, from a scruple to a drachm to the ounce. Carbolic acid is in some cases followed by satisfactory results; likewise tar in the form of a mixture or as an ointment. A mixture containing equal parts of oil of cade, alcohol, and *sapo viridis*, to be rubbed into the patch morning and evening, often proves a valuable stimulating remedy. Tincture of iodine, alone or with glycerine, as recommended by Hebra, at times acts favorably. Anderson also speaks well of this treatment, and gives the following formula: Iodine and iodide of potassium, of each half an ounce; glycerine, one drachm. The part is to be painted until a coating forms.

Stronger applications, caustics, are often demanded in obstinate cases, but they should never be used until milder remedies have been tried. A solution of caustic potash, one part to six or twelve of water, may sometimes be used when other remedies have failed. It should be applied by means of a charpie brush, care being taken not to permit its action to extend too deep into the tissues; dilute acetic acid should be used immediately afterwards. The after-dressing should consist of water, glycerine, or a simple ointment. Anderson reports favorable results in certain cases from the repeated use of cantharidal blistering fluid. The acid nitrate of mercury, corrosive sublimate, chromic acid, nitric acid, chloride of zinc, nitrate of silver, arsenic, red iodide of mercury, in various strengths, have all been used, but without notable success. They

should always be employed cautiously, on account of their destructive properties, as well as on account of the pain they cause.

The treatment by means of erosion with the "eurette," or scraping spoon, as described under lupus vulgaris, has proved successful in many cases. Hebra, Kaposi, Auspitz, Neumann, and Wigglesworth * all speak well of it. Multiple scarification or puncturing, as originally recommended by Volkmann for lupus vulgaris, is said by Veiel and Kaposi to have a corresponding effect in lupus erythematosus. The galvano-cautery has also been successfully employed in some cases.

Prognosis.—This should be guardedly expressed. When fully developed, it almost always proves stubborn. Occasionally it yields more kindly to treatment. The result will depend upon the extent of the disease, its distribution, the number of patches, the activity of the process, and its duration. Relapses are liable to occur.

LUPUS VULGARIS.

Syn., Lupus Exedens; Lupus Vorax; Noli Me Tangere; *Germ.*, Fressende Fleehte; *Fr.*, Herpes Esthiomenos; Dartre Rongeante; Serofulide Tuberculeuse; Esthiomène.

LUPUS VULGARIS IS A CELLULAR NEW GROWTH, CHARACTERIZED BY VARIOUSLY SIZED AND SHAPED, REDDISH OR BROWNISH PATCHES, CONSISTING OF PAPULES, TUBERCLES, OR FLAT INFILTRATIONS, USUALLY TERMINATING IN ULCERATION AND CICATRICES.

Symptoms.—The disease presents a number of appearances as it assumes one form or another, and as it is seen in the various stages of its development. It commonly begins in the form of numerous, small, grouped or disseminated points, situated beneath the epidermis. These are reddish, brownish, or yellowish in color, and have their seat within the structure of the corium, often giving the skin a punctate appearance. They ultimately constitute irregularly shaped, roundish or serpiginous, ill-defined patches, varying in size, which not infrequently coalesce. The puncta, or subcutaneous points, referred to, increase in size and become more prominent, resulting in the formation of papules and ultimately tubercles (LUPUS TUBERCULOSUS). It is at this stage that the

* See a paper by Dr. Wigglesworth, describing the eurette and the manner of its employment, in *Bost. Med. and Surg. Jour.*, Feb. 10, 1876.

disease often comes under notice. The lesions are of all sizes, from a pin-head to a split pea, are brownish red in color, and are covered with a layer of imperfectly formed epidermis. They are firm or soft, and are without pain. The patch now becomes more circumscribed and pronounced in outline. Having arrived at this stage of development, the process may terminate either in absorption of the lesions, leaving a desquamative, atrophic, partially cicatricial tissue (*LUPUS EXFOLIATIVUS*); or, in disintegration and complete destruction of the infiltrated skin, resulting in ulceration and crusting (*LUPUS EXULCERENS*, *LUPUS EXEDENS*). If exuberant granulations spring up about the ulcer, the condition is known as *LUPUS HYPERTROPHICUS*. Anderson* describes a form which he regards as distinct from the ordinary verrucous forms, and which he considers is entitled to be called "lupus verrucosus." It begins by the development of small, circumscribed, dusky-red or violaceous patches or tubercles, which become covered with warty excrescences, which can be readily picked off, leaving a non-ulcerated surface with hypertrophied papillæ.

From the course of the disease as described, it will be seen that the different forms are but modified stages of one process. It may be arrested at any period of its evolution, and in this manner constitute a variety of the disease. Not infrequently several or all of the lesions may be present at the same time, giving rise to a multiform picture in which the whole course of the affection may be studied. The disease in its early stages is unaccompanied by marked subjective symptoms; later, a variable amount of pain may be present.

It has its seats of predilection; it appears commonly about the face,† especially the nose, cheeks, and ears. It also frequently attacks the extremities, particularly the fingers, where it may be followed by serious deformity. The trunk may also be involved. It is a destructive process, wherever it occurs, occasioning extensive ulcers, ugly cicatrices, and at times much deformity. It does not confine its ravages to the skin, but may invade other tissues, as the mucous membrane and cartilage. The mouth, cartilages of the nose, ear, larynx, and even the eye, may be attacked.

* Lectures on Clinical Medicine. London, 1879.

† See Plate B B in my Atlas of Skin Diseases.

Etiology.—The causes are obscure. It usually originates in childhood, generally making its appearance before puberty. It is never congenital. It is rarely, if ever, hereditary. It attacks both sexes in about like proportion. It is of much more frequent occurrence in some countries than in others. Thus, it is common in Germany, Austria, and France, less so in Ireland and England, and decidedly rare in the United States. It occurs here, according to the statistics of the American Dermatological Association, with about the same frequency as lupus erythematosus, 42 cases out of 16,863 having been reported. It is rarer, I think, in this city than in New York. The majority of cases encountered in this country occur among the poor Irish and German population. The general health is found to vary. At times the subjects are debilitated, ill fed, and improperly cared for; other cases, however, show no signs of poor health. It is not caused by syphilis. Both the history and the course of these diseases are different. In the majority of instances lupus and serofuloderma are to be viewed clinically as distinct processes, the former being frequently encountered in cases to which the term serofulosis would be inapplicable. In some cases, however, the disease seems to be a combination of both processes.

Pathology.—The anatomy of this disease has been carefully studied by Virchow* and Auspitz,† and more recently by Lang,‡ Kaposi,§ Friedländer,|| Thoma,¶ Thin,** and Jarisch,†† with somewhat varying results, according to the different lesions and more particularly stages of the disease examined. Briefly stated, the process consists essentially of a chronic inflammation, characterized by a small, indifferent cell-infiltration, tending to develop in the form of aggregations, having its primary seat, as pointed out by Auspitz, in the corium. Recently Kaposi‡‡ has again

* Die Krankhaften Geschwülste.

† Die Zelleninfiltration der Lederhaut. Med. Jahrb., Wien, 1864.

‡ Viertelj. für Derm. u. Syph., 1874, Heft 2, pp. 165, 368; 1875, Heft 1, p. 1. Wiener Med. Jahrb., 1876, Heft 1 (see Viertelj., 1876, Heft 4, p. 603). Wiener Med. Presse, 1878, Nos. 6, 8 (see Viertelj., 1878, Heft 2, p. 346).

§ Loc. cit.

|| Virchow's Archiv, Bd. lx. (1874).

¶ Ibid., Bd. lxx.

** Med.-Chir. Trans., vol. lxii., 1879.

†† Viertelj. für Derm. u. Syph., 1880, Heft 1, p. 3.

‡‡ Path. und Ther. der Hautkrankheiten. Wien, 1880.

expressed his views, and gives so clear an exposition of our present knowledge of the subject that I shall largely quote from his description. Under a low power, microscopic sections of deeply-seated, recent lupus nodules show variously sized, roundish, nest-like masses of tissue irregularly dispersed through the lower part of the corium, the upper and papillary layers of which, however, as well as the rete, according to Kaposi, appear normal. Under higher powers these foci, or nests, are usually seen to be sharply defined from the neighboring healthy connective tissue, which surrounds them in thick bundles. Their structure consists of a finely-branching net-work, plentifully supplied with large vessels. In the larger meshes of this net-work cells are embedded, containing numerous highly refracting nuclei, which stain well; while the smaller meshes contain in addition smaller cells, together with sharply contoured nuclei in large numbers. The embedded elements can sometimes be readily shaken out of the mesh-work, leaving empty spaces behind in place of the foci of formed elements. These appearances are found only in recent nodules.

Further development, as well as the retrogressive metamorphosis occurring later, gives rise to very complicated changes in the lupus tissue and also in most of the elements of the cutis. According to recent observers, as Kaposi,* Lang,† Stilling,‡ Jarisch,§ and Thin,|| the bloodvessels play the chief part in the genesis of the pathological tissue. The recent lesion presents a rapidly proliferating tissue, rich in vessels. When retrogressive metamorphosis sets in, decreased vascularity of the centre of the nodule occurs, and the formed elements undergo neerobiotic change. The elements are either absorbed, or, in superficial situations, are thrown off, the invaded cutaneous tissues undergoing cicatricial contraction. A part of the lupus tissue, however, undergoes organization into young and later coarse connective tissue; and herein, according to Kaposi, lies the essential difference between lupus and lepra and syphilis. Lang¶ also holds the same view. Here and there the so-called "giant cells" of Schüppel** and

* Loc. cit.

† Wien. Med. Presse, 1878, Nos. 6, 8.

‡ Deutsche Zeitschr. für Chir., Bd. viii. p. 72.

§ Viertelj. für Derm. u. Syph., 1880, VII. Jahrg., p. 3.

|| Loc. cit. ¶ Viertelj. für Derm. u. Syph., 1875, Heft 1, p. 1.

** Untersuchungen über Lymphdrusen-Tuberculose. Tübingen, 1871.

Friedländer* appear. These are large, circular, ovalish, or irregular, well-defined, homogeneous or finely granular masses containing numerous oblong refractive nuclei. They were formerly believed to be characteristic of tubercle, but are now known to occur in various tissues and growths.

While some lesions are undergoing the changes above described, others extend in various directions, unite, and give rise to a diffuse cell-infiltration, involving all the tissues of the skin, and finally ending, as a rule, in cicatricial contraction. When the lupus process has gone on for some years, a general hypertrophy of the tissues resembling elephantiasis may result. In some cases the papillæ become highly developed and verrucose in character, constituting lupus hypertrophicus.

The epithelial structures of the skin, according to Kaposi, are involved at an early stage of the process. Cell proliferation and degeneration take place in the rete, the boundary-line between the papillary and mucous layers being merged by the penetration of the lupus infiltration into the latter. When the rete is destroyed by suppuration or desquamation, the lupus lesions are exposed and ulceration occurs. The sweat and sebaceous glands are involved and suffer with the other tissues; also the hair-follicles, resulting in loss of the hair. The ducts of the glands being destroyed, the acini frequently form epithelial globes or nests, or milium-like bodies resembling pearls embedded in the skin. Occasionally epithelial hyperplasia takes place, the epithelium of the rete growing down in prolongations into the corium, and then, joining similar processes from the glands and follicles, spaces are found enclosed by pure epithelium, which may become a histological basis for the development of epithelioma. The combination of lupus and epithelioma has been described by various writers, notably by Lang† and Kaposi.‡

Diagnosis.—Lupus vulgaris is to be distinguished from syphilis, the disease with which it is most liable to be confounded, by attention to the papules, tubercles, ulcers, crusts, history, and course of the affection. The ulcerative stages most closely resemble each

* Loc. cit.

† Viertelj. für Derm. u. Syph., 1874, Heft 2, p. 165.

‡ Ibid., 1879, Heft 1, p. 73.

other. The ulcers of lupus are, in the majority of cases, comparatively superficial; those of syphilis are ordinarily deep, and often have an excavated appearance. The ulcer of lupus is usually less extensive than that of syphilis. In lupus, moreover, there are, as a rule, a number of points of ulceration, which incline to become confluent, whereas in syphilis if several exist they usually remain separate and distinct. The border of the syphilitic ulcer is sharply defined; that of lupus is not apt to be so. The secretion of the syphilitic ulcer is generally copious, and offensive in odor; in lupus the discharge is usually slight, and inoffensive. The crusts of lupus are generally scanty, and reddish brown in color; those of syphilis are bulky, and are frequently greenish. The histories of the diseases are altogether unlike; lupus is very slow in its course, while syphilis is comparatively rapid. A month or six weeks is often sufficient to produce the characteristic ulcer of syphilis; months or years would in all probability be required to bring about the same amount of destruction in lupus. If the case be one of syphilis, other symptoms of this disease will almost always be present. The cicatrices of lupus are generally distorted, hard, shrunken, and yellowish; in syphilis they are softish and whitish, and are not apt to be particularly disfiguring, considering the amount of ulceration which has preceded.

Lupus should not be confounded with epithelioma. As stated, they may appear together, but this occurrence is rare. The localization of this disease, its usually painful character, and its seat, together with the circumscribed induration of the lesion, will in most cases serve for the diagnosis. In the ulcerative stages, however, the diseases may resemble each other. The destructive tendency of epithelioma is notable, the loss of substance being seldom so great in lupus. The ulceration of epithelioma starts from a point and usually increases peripherally; that of lupus begins generally at many points within the patch. The hard, everted border of epithelioma is rarely, if ever, seen in lupus. The epitheliomatous ulcer is usually deep, with an uneven base, while that of lupus is more or less superficial, with a reddish base of fine granulation tissue. The course of epithelioma is, as a rule, more rapid than that of lupus. Epithelioma seldom occurs in the young; lupus usually begins in childhood.

Lupus erythematosus is never accompanied by ulceration, and

*the absence of this feature will always enable this disease to be diagnosed from lupus vulgaris. The patches in lupus erythematosus are superficial, uniformly reddish in color, and covered with adherent, grayish or yellowish scales. They are, moreover, circumscribed, and are without papules or tubercles. The sebaceous glands and follicles are generally markedly involved in lupus erythematosus, which is not the case in lupus vulgaris. The age at which the diseases usually first appear is also to be remembered. Acne rosacea at times bears some resemblance to lupus vulgaris, but may readily be distinguished by its dilated vessels, color, the presence of acne pustules, history, and course.

Treatment.—Lupus vulgaris is one of the most obstinate of all cutaneous diseases. It seldom yields except under the most determined measures. It is, however, I think, somewhat more amenable to treatment, especially constitutional treatment, in this country than abroad. In Austria the disease, it would seem, defies such remedies. The general condition of the patient is to be inquired into. The age, past history, mode of life, and present state, as regards both the extent of the disease and health, should all receive attention. Hygienic influences should be considered. The digestive tract should be kept in order, the bowels and other functions regulated, and every means employed to promote health. The diet is likewise of importance. It should consist of the most nutritious articles of food. Cod-liver oil is certainly one of the most valuable remedies, and should be freely administered for a long period. Iodide of potassium is of almost equal value. In some cases I have found it to succeed admirably; its influence should always be tested before severe external remedies are resorted to. Liveing recommends a mixture containing one fluidrachm syrup of the iodide of iron; three minims tincture of iodine; and five grains iodide of potassium. Iodine and phosphorus may also be advantageously employed, especially in combination with cod-liver oil. According to Neumann, sulphur baths are sometimes highly beneficial.

External remedies, however, are, in the majority of cases, more important than internal treatment. A number of preparations, most of them of a caustic nature, have been recommended. They should be selected to suit the particular stage and variety of the disease. The amount of surface and the region of the body in-

volved are also to be taken into consideration. In the earlier stages stimulating applications may be employed with a view to bring about absorption; equal parts of tincture of iodine and glycerine, painted over the part, mercurial plaster, tar, and ointment of the red iodide of mercury, may be used for this purpose. In the non-ulcerative forms oil of cashew-nut is recommended by Vidal,* applied with friction every three or four days. Caustics are, however, necessary in the majority of cases. Of these, potassa, nitrate of silver, arsenic, pyrogallie acid, carbolic acid, acetate of zinc, red iodide and red sulphuret of mercury, and chloride of zinc, either alone or in various combinations, are the most valuable.

Potassa may be used where a powerful effect is required, but it should always be handled with care. In stick form it may be applied to tubercles and hypertrophic conditions which require destruction. A solution of potassa, one or two drachms to the ounce, is also of service, applied by means of a charpie brush. The operation is severe, although the pain does not continue long, ceasing upon neutralization of the alkali with acetic acid, which should invariably be applied immediately after the cauterization.

Nitrate of silver, in stick form or in solution, equal parts with water, constitutes one of the best caustics, and may be employed without danger of leaving scars. It never penetrates deeply. Papules and tubercles may be disturbed by boring into them with the solid stick, while patches are most successfully treated with the solution, repeatedly applied with the charpie brush. It is the mildest and safest of the caustics, and should therefore be employed about the region of the face, where cicatrization is to be guarded against.

Arsenic has long been used. It possesses the advantage that when applied to a part it destroys only the diseased tissue, leaving the healthy skin intact; but it is a painful application. Cosme's paste, as modified by Hebra, is the best method of employing it:

R. Acidi Arseniosi, ℥i;
Hydrarg. Sulphuret. Rub., ʒi;
Ungt. Simplicis, ʒi.
M. Ft. ungt.

* Gazette des Hôpitaux, No. 35, 1879.

This is to be spread thick on a piece of cloth, and applied closely to the patch for two or three consecutive days, until the lupus nodules and points are blackish and destroyed. On the second and third days the pain is apt to be severe. The results, however, are at times satisfactory. Pyrogallic acid is also a particularly valuable remedy, somewhat analogous in its action to arsenic, though less severe, and may be used in the form of an ointment in the strength of one or two drachms to the ounce. It is comparatively painless.

Carbolic acid has been repeatedly tried, but with indifferent success; it acts superficially and produces considerable pain. Acetate of zinc, well spoken of by Neligan, and more recently by Weisse,* may be applied in the form of the crystal. Its use should be repeated from week to week until cicatrization takes place. The pain is said to be severe at the time, but not to continue; it may be relieved by the use of water. An ointment composed of equal parts of the red iodide of mercury and simple ointment, applied upon a piece of cloth, is used frequently by Hardy; it produces a caustic effect, with discharge, at the expiration of from six to twelve hours, followed by a crust.

Chloride of zinc may be used as a paste, as in the following formula, proposed by Hebra: Equal parts of chloride of zinc and chloride of antimony, with sufficient strong hydrochloric acid to dissolve the chloride of zinc. They are to be rubbed up with enough powdered liquorice root to make a paste, and spread upon a piece of cloth and applied while still moist. It should be permitted to remain on twenty-four hours, when an eschar will have formed. It is a strong caustic, and should be applied only when it is desirable to destroy the whole patch, for it acts upon healthy as well as upon diseased skin. Vienna paste, consisting of equal parts of potassa and lime, may be recommended for a similar purpose. It is to be made into a paste with alcohol at the time it is used, and applied upon a cloth for five or ten minutes; it destroys everything with which it comes in contact, producing a blackish eschar. The action of the caustic should be arrested with acetic acid, and the surface dressed with a water compress or with simple ointment. When either of the two latter preparations is employed,

* Amer. Jour. of Syph. and Derm., Oct. 1870.

the skin surrounding the patch should be protected with strips of plaster.

The treatment of the disease by erosion, or scraping with the dermal eurette, or scraping spoon, according to the method devised by Volkmann,* has proved very successful, and may be regarded as a most valuable remedial measure. The instrument used is a small, round or oval metallic spoon or scoop with sharp edges. Various shapes and sizes will be found useful, according to the case and the tissue to be attacked.† The disease, after being frozen, is scraped away or dug out until the base of the wound is found to be sound. The operation should always be thorough. The sear, as a rule, is soft and smooth and less disfiguring than that which follows caustics. If the disease be extensive or painful, the patient should be etherized. Where difficulty is experienced in destroying the disease by erosion, this process may be supplemented by the use of caustics, as, for example, pyrogallic acid, arsenic, or chloride of zinc, or by the galvano-cautery. Both the actual cautery and the galvano-cautery have been used by Hebra, and are recommended, especially the latter, by Neumann, Kaposi, and Piffard. Sharp-pointed cylindrical or knife-shaped instruments may be employed, or, in some cases, the wire loop. The operation is not very painful. Neumann‡ figures a convenient instrument for the purpose. Where much destruction of tissue is demanded, Paquelin's thermo-cautery may be used with advantage.

The treatment by multiple puncture or scarification is also of great value, the object being to set up a traumatic inflammation, under which the disease heals. Balmano Squire§ has devised a method of multiple linear scarification by means of a many-bladed knife. The tissues are first frozen, by means of a mixture of ice and salt or by the use of an atomizer with rhigoline, and a number of parallel incisions made through the lupus tissue, followed

* Sammlung Klinische Vorträge, No. 13. Leipzig, 1870.

† They may be obtained from any of the instrument-makers, among whom I may mention J. H. Gemrig & Sons, of this city, Tiemann & Co., of New York, and John Weiss & Son, of London.

‡ Lehrbuch der Hautkrankheiten, 5ter Auflage. Wien, 1880, p. 463.

§ Trans. of the Brit. Med. Assoc. Arch. of Derm., 1879, p. 413. See also an article favorable to this method of operation, by Vidal, in the Annales de Derm. et de Syph., Jan. 1880, p. 144; also Arch. of Derm., Oct. 1879, p. 425.

by similar scarifications in a direction transverse to the first. The bleeding is slight, and the pain passes away in the course of an hour or two. If active inflammation be set up, cold compresses may be used. Multiple puncture by means of sharp-pointed instruments charged with iodized glycerine has also been used by Auspitz* and others. Schiff† suggests a rubber pipette to which is attached a hypodermic syringe needle; this being charged with the caustic solution, the point of the needle can be introduced into the lupus nodule and a single drop of the caustic injected exactly at the desired point.

Prognosis.—This will depend upon the form of the disease, its duration, the age of the patient, and the extent of surface involved. The disease runs an exceedingly stubborn and chronic course. If it be confined to one patch or region, a more favorable termination may be anticipated. The thoroughness of the external treatment must also influence the prognosis. The deformity attending and following the disease, in the form of hard sears and contraction of the joints, is usually marked.

SCROFULODERMA.

Symptoms.—Under the name scrofuloderma I would include those morbid conditions of the skin which exist as an expression of the peculiar state of the system designated scrofula, scrofulosis, or struma. The cutaneous lesions vary materially, but are nevertheless in most cases characterized by certain general features which serve to distinguish them from other diseases. As a rule, the affection begins in one or more of the lymphatic glands, which become swollen and permanently enlarged, constituting firm, roundish or oval tumors, unattended in the beginning by redness or pain. They increase in size slowly. Having attained certain dimensions, as, for example, the size of an almond, they may either remain in this state, or, as is usually the case, undergo softening. The skin covering them becomes hyperæmic, chronically inflamed, of a violaceous hue, and by degrees thin and sensitive.

In the course of time, ordinarily months, fluctuation is expe-

* Ueber die Mechanische Behandlung der Hautkrankheiten. Viertelj. für Derm. u. Syph., III. Jahrg., 1876, p. 562. A valuable article.

† Viertelj. für Derm. u. Syph., VII. Jahrg., 1880.

rienced, and the tumor breaks open, giving forth a discharge, composed of pus, blood, serum, and a whitish or yellowish, flaky, caseous matter. The character of the fluid varies, being at times puriform, in other cases thin and watery. The discharge usually continues oozing more or less for an indefinite period. Sinuses are apt to form, which often burrow deeply and invade the adjacent tissues. The condition is now chronic, and may remain, becoming better and worse from time to time, for months or years. Sooner or later, however, the glands break down completely, terminating in ulcers, the tendency of the disease being to ulceration and cicatrization.

The ulcers vary as to their size, shape, depth, and general features, according to their seat and other circumstances. They are usually elongated or almond-shaped, with irregular, thin, more or less undermined, pale-red or violaceous edges. Their bases are uneven, and are usually studded with unhealthy-looking, pale, flabby granulations. They incline to bleed easily. According to the amount of secretion and its nature will the crust be slight or extensive, but, as a rule, it is inconsiderable. The crust may be either brownish or grayish in color, and is usually thin and adherent; when removed, the ulcer is apt to bleed. The serofulous ulcer manifests no disposition to heal. Its course is chronic. The reparative process is always slow. As a rule, it is not painful. The scar is generally of a hard, irregularly contracted, knotty character.

The disease is most often met with about the face, beneath the lower jaw, and around the neck. A variety of concomitant symptoms, indicative of the serofulous state, usually accompany the cutaneous manifestation. Chronic inflammatory affections of the eyes, discharge from the ears, and coryza are at times present, particularly in children. In other cases, swellings of the joints and enlargement of the bones are observed. The skin generally has a pale, yellowish appearance, and is soft and flabby, and at times puffed. Old scars, the result of previous disease, may often be detected in one or another region.

In place of the lesions just described, which constitute the usual cutaneous manifestations, there may develop other and rarer varieties of the disease, which may be referred to. The disease sometimes manifests itself by the formation of variously sized,

often large, rounded, ovalish, or irregularly shaped, yellowish, flat pustules, with a deep-red or violaceous areola. The crust forms slowly, beginning in the central portion of the pustule, and may be complete or partial. It is usually flat and scanty, differing in this respect from the similar syphilitic lesion. It is brownish and adherent, and when raised shows an ulcer with the general characters described as belonging to the scrofulous ulcer. One, two, or more lesions may exist. They may appear upon any region. They pursue a chronic course, and are followed by marked, soft, and comparatively superficial scars.

Another and rarer scrofulous manifestation is characterized by the formation of one or more variously sized, irregularly shaped, ill-defined, papillary, verrucous, or fungoid growths. Their color is a pale, bright, dusky, or violaceous red. The surface is excoriated or ulcerated, and often shows yellowish, punctiform or foraminous lesions, accompanied by discharge and crusting. Such formations are met with usually on the hands, and are accompanied ultimately by deformity, resulting from deep-seated and sometimes bone changes. Their course is eminently chronic. The disease resembles the verrucous or hypertrophic variety of lupus vulgaris.

Another variety of disease, which I have elsewhere* described at length, and which for the present may be viewed as a manifestation of scrofulosis, consists in the formation of pin-head and small split-pea sized, disseminated, yellowish, flat pustules, with usually a raised, violaceous areola. In general appearance the lesions resemble those of the small pustular syphiloderm. They crust over gradually, in the course of from one to several weeks, with depressed, shrunken, hard or horny, yellowish or grayish, adherent crusts, which in time drop off, leaving marked, punched-out-looking, indelible scars, resembling those of variola. The lesions are further characterized by a sluggish, chronic course, and may last weeks or months. They appear at irregular periods, new ones coming out as the older ones disappear, so that the patient is rarely free of them. The disease may continue for years. It may occur upon any region, but in the cases that I have encountered it has shown a disposition to appear about the face and on the extremities. Other symptoms of scrofulosis are sometimes present.

* Amer. Jour. of Med. Sci., Oct. 1881.

Etiology.—It may be inherited or acquired, but it is usually inherited, frequently arising from the marriage of blood relations. The causes which are recognized as being capable of producing the disease during life are insufficient and unwholesome food, and depressing external influences of all kinds, as, for example, long residence in cold and wet climates, impure air, damp and dark dwellings, want of exercise, and the like. It is also known to follow certain diseases, as, for example, measles and scarlatina, and perhaps remotely, in the third or fourth generation, syphilis. It is apt to show itself first in early childhood. It is more common in the colored than in the white race, and is particularly prone to attack mulattoes. It is not contagious. The nature of the disease is still involved in obscurity. The question of the relation of serofula and syphilis to lupus has again been brought forward by Kaposi* and by Auspitz.† The latter gives to lupus a broader clinical significance than most authors. He applies the name to a group of symptoms which develop upon the anatomical basis of a granuloma, as described by Virchow, and are characterized clinically by the persistence, continuous relapse, and slow degeneration of their nodular, flattened, and often serpiginous forms of eruption, which sometimes are scaly, in other cases ulcerate, and sometimes atrophy into cicatrices without ulceration. Under this definition he believes that certain forms of inveterate and hereditary syphilis may be properly called syphilitic lupus, the same holding true of serofula.

Diagnosis.—It is to be distinguished from lupus vulgaris and from syphilis by the presence of the concomitant general symptoms of serofulosis, and by the peculiar features of the lesions, which in the majority of cases differ materially from those of lupus vulgaris and syphilis.

Treatment.—The treatment must be directed against the general disease. The internal remedies of service are the preparations of iron, iodine, and sulphur, phosphorus, lime, and cod-liver oil.

* Ueber den sogenannten Lupus Syphiliticus. Wiener Med. Wochenschr., 1877, Nos. 50, 51, 52.

† Ueber Lupus Syphiliticus und Serophulosis. Wiener Med. Presse, Nos. 3, 4, 1878. See an abstract of the article, by Dr. J. C. White, in Bost. Med. and Surg. Jour., June 20, 1878.

According to Harkin* and Shoemaker,† chlorate of potassium is also a valuable remedy. Sea air and attention to hygiene are both of importance. The diet should be generous, and should consist largely of animal food. Locally, the ulcers are to be treated by stimulating ointments, the mercurial preparations being the most reliable. Lotions are likewise useful, corrosive sublimate and alcohol, from a quarter of a grain to a grain to the ounce, and yellow-wash, constituting valuable applications. Tincture of iodine, diluted, and the solution of chlorinated soda may both be used with benefit. The curette is also of great value here, as in lupus vulgaris.

TUBERCULOSIS OF THE SKIN.—The existence of tuberculous ulceration of the skin has long been disputed, but Chiari‡ reports five or six cases, all occurring upon the lips, and in one case the anus also, which seem to be entitled to this designation. Jarisch§ has also reported a case in which the ulceration occurred about the ear and in the mucous membrane of the oral cavity. The ulcers are roundish, ovalish, or (as in Jarisch's case) serpiginous, with irregular, gnawed, bright-red, swollen, moderately infiltrated edges, the ulcerating surface being granular and of a reddish-yellow color. The secretion is thin and scanty. They do not bleed easily when handled. When they occur on the mucous membranes, they show small, pin-head sized, yellowish papular lesions in the neighborhood. The disease is invariably found in tuberculous subjects, and runs a comparatively rapid course. It is very rare. Chiari examined the bodies of six thousand patients, sixty per cent. of whom had died of tuberculosis, and encountered the tuberculous ulcer in only five instances.

Microscopic examination shows infiltration of the tissues beneath and about the ulcer, with numerous lymphoid cells, interspersed here and there with small, isolated or aggregated, rounded nodules (true miliary tubercles), some of which are superficial and correspond with yellowish lesions on the surface of the sore.

* Dublin Quar. Jour. of Med. Sci., Nov. 1861, and May and Nov. 1880.

† Trans. Amer. Med. Assoc., 1880; Med. Bull., Sept. 1880.

‡ Wien. Med. Jahrb., 1877, Heft 3, p. 328, and Viertelj. für Derm. u. Syph., VI. Jahrg., 1879, p. 269.

§ Ibid., p. 265.

The nodules are composed of small rounded cells, and are often found broken down in their centre and undergoing cheesy degeneration.

Mention may here be made of the disease which is known as *PODELCOMA*, *FUNGUS FOOT OF INDIA*, *MADURA FOOT*, and *MYCETOMA*. It is characterized by swelling of the affected part—usually the foot, although the hand or other regions may be invaded—and the formation of pea sized, soft, tubercular lesions which are studded with masses of minute blackish grains resembling fish-roe, which ooze from sinuses leading from the interior of the affected part. The disease is encountered chiefly in India, and has been studied by Vandyke Carter* and Lewis and Cunningham;† but it also occurs in this country, as in the following case reported by Kemper.‡ The patient was a young man, an American by birth, whose foot six months before became reddened, swollen, and painful, followed in a few weeks by extreme tenderness of the sole with blebs, which were succeeded by openings from which oozed a glairy fluid resembling the white of an egg. Ulcers formed later, which were covered with a whitish, fluffy substance like mould, and which were found to be the openings of deep-burrowing sinuses. On account of the great pain, amputation was ultimately performed, when portions of the muscles were discovered to be disintegrated and to contain masses of a mould-like material which under the microscope with two hundred diameters was seen to be composed of numerous granulated, rough, irregularly-shaped, yellowish, refractive bodies, which Dr. Kemper regarded as vegetable spores. The disease has never, I believe, before been described as occurring in this country. Its exact nature does not seem to be positively established. It is questionable whether it is due to fungus.

In this connection reference may also be made to *AINHUM*, a disease peculiar to the African race, which has been described by Silva Lima, of Bahia.§ It is characterized by a slow, progressive,

* On Mycetoma. London, 1874.

† The Fungus-Disease of India. Calcutta, 1875.

‡ Amer. Practitioner, Sept. 1876.

§ Arch. of Derm., Oct. 1880.

fatty degeneration, generally with increase in volume of the toes, especially of the smallest, involving almost all of their anatomical elements, resulting from a nearly linear strangulation, occasioned by the presence of a narrow strip of contracted and hardened skin. This embraces at first a part and afterwards the whole of the circumference of the toe, at the digito-plantar fold. The constriction, after from four to ten years, forms a deep circular furrow, which determines the absorption of the phalanges, the obliteration of the vessels, and the inevitable dropping off of the toe. The disease is said to be common on the west coast of Africa, and is also met with in certain Indian tribes in Asia. In South America it is encountered in Bahia, Rio de Janeiro, and Buenos Ayres. Cases have been encountered in North Carolina, reported by Drs. Hornaday and Pittmann.*

The disease known under the title of PERFORATING ULCER OF THE FOOT, and on the continent and especially in France as MAL PERFORANT DU PIED, may also be referred to. According to Savory and Butlin,† who have published a valuable article on the subject, the lesion is not accurately described by the term ulcer. It varies in character, but is usually characterized by a small aperture, like the orifice of a sinus, in the centre of a large corn, which leads directly down by a narrow channel to exposed and diseased bone. Sometimes there are granulations around the orifice. There is little or no discharge, and in all respects the lesion is indolent. There is no pain, scarcely any even upon pressure. There is usually anæsthesia of the region, with reduced temperature, and a tendency to profuse perspiration.

The ulcer is usually seated over the articulation of the metatarsal bone with the phalanx, generally over that of the first or the last toe. There may be more than one, and both feet may be affected. The disease, according to Savory and Butlin, is the result of pressure, or violence, or injury to structures whose nutrition is impaired or whose vitality is defective from disease or degeneration of the supplying nerves. The lesion is rebellious to treatment,

* North Carolina Med. Jour., Sept. 1881.

† Med.-Chir. Trans., vol. lxii., 1879 (with a chromo-lithograph, microscopic drawings, and a bibliography).

usually recurring after operation or even amputation of a toe or a portion of the foot. The use of an artificial leg may be resorted to, thus giving the part complete rest.

LEPRA.

Syn., Elephantiasis Græcorum; *Lepra* Arabum; *Leontiasis*; *Satyriasis*; *Leprosy*; *Germ.*, Der Aussatz; *Fr.*, La Lèpre; *Norwegian*, Spedalskhed.

LEPRA IS AN ENDEMIC, CHRONIC, MALIGNANT, CONSTITUTIONAL DISEASE, CHARACTERIZED BY ALTERATIONS IN THE CUTANEOUS, NERVE, AND BONE STRUCTURES, RESULTING IN ANÆSTHESIA, ULCERATION, NECROSIS, GENERAL ATROPHY, AND DEFORMITY.

Symptoms.—The disease is a constitutional one, and involves the whole organism most profoundly. It exhibits its presence by both general and local symptoms of a marked character. Its invasion is usually slow and insidious, years often elapsing before it becomes pronounced. Premonitory symptoms, consisting of malaise, mental depression, languor, sleepiness, loss of appetite, nausea, chills, repeated attacks of fever, general debility, nervous prostration, and pains in the bones, are present in the majority of cases. These may be severe or slight, and may continue for weeks, months, or years without other symptoms. Sooner or later, however, more characteristic features manifest themselves, prominent among which are the lesions of the skin. These, like the earlier symptoms, vary in form; they may be either bullous, macular, pigmentary, or tubercular. They may appear separately, following one another in succession, or, as not infrequently happens, several or all of them may be present at the same time. The cutaneous manifestations, like those of syphilis, are remarkable for their multiplicity. They also vary exceedingly as regards the degree of their development; at times they constitute the principal symptoms of the disease, while in other cases they are subordinate to the lesions of other tissues. Various organs of the body are, sooner or later, influenced by the disease, particularly the nerves. It will thus be seen that the manifestations upon the skin represent but one phase of a serious and malignant systemic disorder.

Two forms of leprosy are recognized, the tubercular and the anæsthetic. No absolute line, however, separates the one variety from the other. Although the symptoms of each are generally

well marked, they not infrequently appear simultaneously upon different parts of the body. One variety may, moreover, pass into the other. From these remarks it will be understood that the manifestations of either form of the disease are liable to vary considerably.

LEPRA TUBERCULOSA—TUBERCULAR LEPROSY.—As the name indicates, this variety is attended chiefly by the formation of masses of infiltration and tubercles; together with these, however, are found other lesions, at times almost as prominent in character as the tubercles. An eruption of blebs, similar to those observed in pemphigus, usually constitutes one of the first cutaneous manifestations. These may show themselves irregularly for some time before other more definite symptoms appear. It is said that they more frequently precede the anæsthetic than the tubercular form of the disease. Macules now make their appearance as smooth, shining, erythematous patches (LEPRA MACULOSA). They are usually defined, and consist of circumscribed areas of infiltration; in other cases they are not surrounded by any line of demarcation, but fade into the healthy tissues. They are usually upon a level with the skin, but they may be somewhat raised. In color they are yellowish or reddish, assuming usually a dusky yellowish or brownish hue as they grow older. Not rarely they are pale-yellowish in color, and have the appearance of a firm, fatty, lardaceous deposit. They are aptly likened to a piece of cut, raw bacon, inserted in the skin, and are generally surrounded by a delicate pinkish or lilac border, which upon close inspection is seen to be made up of a minute plexus of bloodvessels. The sensibility is materially altered from the first, and is found to vary between hyperæsthesia and complete anæsthesia; at first they are usually hyperæsthetic, while later they become markedly anæsthetic. They may appear upon any part of the body, although their most common seat is upon the trunk and extensor surfaces of the extremities; not rarely they are present in such numbers as to involve a considerable surface of the body. Their course is variable; they may disappear and reappear from time to time, or they may remain as permanent lesions, in which case they increase in size.

Sooner or later the disease manifests itself in the form of variously shaped and sized nodules and tubercles, which may

assume the definite outline of tubercles, or develop into irregularly-shaped prominences and elevated masses (LEPRA TUBEROSA). When typical, they are roundish in form and of all sizes from a cherry to a walnut, or even larger. They may either stand forth conspicuously or be but slightly raised. They have a yellowish, brownish, or bronzed color. Their seat is in the skin and subcutaneous tissues. They are more or less painful when pressed upon. They manifest themselves upon all regions of the body, but generally form in greatest numbers about the face, the forehead, eyebrows, cheeks, nose, lips, chin, and ears being favorite localities. The other portions of the body, notably the trunk, buttocks, arms and legs, fingers and toes, are likewise often invaded.

The deformity which these tubercular or nodular masses occasion is striking. When they occur about the face, the features become horribly distorted. The tissues appear more or less swollen and infiltrated, while the skin is here and there thickened, puffed out, and moulded into unsightly shapes. The natural lines of the surface are exaggerated, and give a heavy expression to the face. The skin of the forehead and eyebrows is usually markedly thickened and corrugated, and stands out in bold prominences, suggesting a likeness to the head of the lion (LEONTIASIS). The nose, cheeks, and mouth are also often the seat of extensive infiltrations. Later in the course of the disease the tubercles appear upon the mucous membrane of the mouth, extending into the various passages, attacking the pharynx, epiglottis, larynx, and nares. The eye also suffers.

The course of the tubercle varies. It may last for a long period without undergoing much change, or, on the other hand, it may at once pass into softening and ulceration; or it may disappear by absorption. Ulceration occurs for the most part about the fingers and toes, the ulcers being covered with adherent, brownish crusts.

LEPRA ANÆSTHETICA—ANÆSTHETIC LEPROSY.—This variety may appear either in conjunction with the tubercular form or alone, in which case it is characterized by the presence of a number of symptoms in addition to the anæsthesia. Frequently one of the first symptoms encountered is an eruption of blebs, which appear in an irregular manner, coming out from time to time, followed by pigmentation. They may continue to show

themselves for an indefinite period, after which anæsthesia is noticed about their former seat. In other cases the macules referred to in describing the tubercular form constitute the earlier symptoms. Hyperæsthesia of the skin is also one of the early signs of the disease, the patient complaining of pains and burning sensations, which are usually succeeded by anæsthesia, affecting either a limited portion or the greater part of the surface. The macular patches are anæsthetic, often to such an extent that a pin may be thrust into and through them without causing pain. Later, portions of the skin free of macules become in like manner anæsthetic. The skin now frequently assumes an atrophic condition, being dry, yellowish or brownish in color, and more or less wrinkled.

Following this alteration in the structure of the skin, the subcutaneous tissues and muscles undergo atrophy, giving rise to deformity, especially of the fingers and toes. The hair and nails also show the same change, and are either altered in their structure or are completely cast off. The hands and feet suffer most seriously, and are subject to great mutilation. The fingers and toes become bent, crooked, and contracted. Sooner or later the bones are attacked, causing destruction of the joints and of the bones themselves. The skin over the joints becomes excoriated and ulcerated, the ends of the bones undergo disintegration, and the phalanges finally either become absorbed or drop off. Not only fingers and toes but also hands and feet may gradually be lost. The extremities become more or less completely anæsthetic, and are greatly wasted, at times to half their former size (LEPRA MUTILANS).

Etiology.—The causes of the disease, notwithstanding the efforts that have been made to elucidate them, still remain obscure. A multitude of facts, however, of extreme interest have been brought together, from which valuable information has been deduced. Leprosy has existed from time immemorial, quite accurate descriptions of it being found in the writings of the ancients. At the present time the disease, existing endemically, is limited to certain geographical districts, which, however, embrace an extensive tract of territory, as may be seen by the following enumeration of the countries. It exists in Africa, along the shores of the Mediterranean and of the Atlantic and Indian Oceans, as well as in the

interior of the country ; also in Asia Minor, Arabia, Persia, India, China, Japan, Kamtsehatka, the various islands of the Pacific Ocean, and Australia. According to returns made in 1872, there were 99,000 lepers in the territories of India.* In Europe, it is found in Norway, Southern Spain, Sicily, Greece, and Southern Russia. Upon the western hemisphere it occurs in Mexico, Central America, in the islands of the West Indies, along the coast of South America, and especially in Brazil. It also exists to some extent in the island of Iceland. The disease also prevails to a large extent in the Sandwich Islands, Chinese emigrants, it is said, being responsible for its introduction upon these islands. According to Piffard,† forty years ago the disease did not exist there ; now one-tenth of the inhabitants are lepers. The disease is likewise found to some extent in the United States. Cases have been encountered in some of our Southern and Western States, especially Louisiana and South Carolina. Prof. Jones‡ reports sixteen cases in Louisiana. A notice of sixteen cases (reported from notes furnished by Dr. W. H. Geddings, of Charleston, S. C.) is also recorded by Dr. J. C. White.§ These were observed in Charleston, within a period of thirty years, upon the persons of four Jews, eight white Christians, three mulattoes, and one full negro. Cases have also been met with in Maryland, by Rohé|| and Atkinson,¶ in New York, by Bulkley,** in Minnesota, among Norwegians, by Grünvold,†† and by Foye,‡‡ among the Chinese, in California. The subject of leprosy in our country has lately received considerable attention, in the form of reports of

* Leprosy in India. A report by T. R. Lewis, M.B., and D. D. Cunningham, M.B. Calcutta, 1877.

† New York Med. Rec., 1881, vol. i. p. 212.

‡ Annual Report of the Board of Health of the State of Louisiana for the Year 1880. New Orleans, 1881.

§ Trans. Internat. Med. Cong., Phila., 1877.

|| Maryland Med. Jour., July, 1878.

¶ Trans. Amer. Derm. Assoc., 1881.

** New York Med. Rec., 1881, vol. i. p. 212. Two cases are reported, who were born in this country, neither ever having been farther than five hundred miles from New York City : neither had any hereditary history or any personal relations whatsoever with the disease.

†† Trans. Amer. Derm. Assoc., 1878.

‡‡ Ibid., 1881.

cases by Drs. Hyde,* Grünvold,† Bendeke,‡ Høegh,§ Rohé,|| Salamon,¶ and Jones,** and in the collection of valuable information through the labors of the Committee on Statistics of the American Dermatological Association.†† It is certainly a fact that the disease exists sporadically in almost all sections of our country, in some localities more prevalently than in others, and in natives as well as in foreigners.‡‡ The number is estimated variously at from fifty to one hundred.

It will thus be seen that its distribution is very extensive. It is, of course, much more common in certain localities than in others, notably so in Southern Asia and in the islands of the Pacific Ocean. The disease seems to be caused by different influences as it occurs in one country or in another; it therefore becomes difficult to determine upon the causes: certain points, however, are well settled. It is in many instances hereditary, and may be conveyed from parent to child through a series of generations. Concerning its contagiousness opinions differ. Drs. Lewis and Cunningham§§ do not consider it so. Dr. Enders,||| of the Sandwich Islands, on the other hand, believes that it is both contagious and inoculable. It is not unlikely, in my opinion, that it may be transmitted through the secretions and

* Amer. Pract., Feb. 1879; also Chicago Med. Jour. and Ex., Dec. 1879.

† Trans. Amer. Derm. Assoc., 1879; also Arch. of Derm., Jan. 1879.

‡ Trans. Amer. Derm. Assoc., 1879.

§ Ibid.

|| Maryland Medical Journal, July, 1878.

¶ Proceedings of the Louisiana State Medical Association, 1879.

** New Orleans Med. and Surg. Jour., March, 1878.

†† See Trans., New York, 1878-79.

‡‡ At Tracadie, in the province of New Brunswick, there has long existed a small colony of lepers. In 1863 they numbered twenty-three persons. They are French Roman Catholics, and are said to be of the lowest class. The disease was probably introduced into the country by a French emigrant family from St. Malo, Normandy, in the early part of the present century. Leprosy also occurs on the island of Cape Breton, Nova Scotia. See notes of cases by Fletcher, reported by Macphedran, in Canadian Jour. of Med. Sci., Sept. 1881, and Jan. 1882.

§§ Leprosy in India. Calcutta, 1877.

||| Louisville Medical News, 1879. See also an account of the disease as it exists in these islands, by this observer, in the Trans. of the Internat. Med. Cong. at Phila. Phila., 1877.

the blood, as in the case of syphilis. Piffard* entertains the same view.

The most potent causes in the production of the disease appear to be intimately connected with climate, state of the soil, food, and habits of the people. Investigations concerning the nature of the climate in those countries in which the disease exists, point to no conclusions which throw any light upon the subject. From the geographical distribution, it will be seen that though more common in tropical climates it occurs also in the coldest of climates, as, for example, Iceland and Norway. The state of the soil has been regarded by many as having a potent influence in the production of the disease, it being believed that a peculiar "malaria" is given off in the districts in which leprosy occurs. The majority of those attacked by the malady are in the lowest walks of life, surrounded by abject poverty and destitution, fit subjects for disease of any kind. On the other hand, the disorder also attacks those in the most favored circumstances. The food used by the inhabitants in many of the leprosy districts is of an inferior quality, consisting in great part of fish, oil, rice, and other articles of food peculiar to the country, and upon which the natives live almost exclusively. The disease occurs in both sexes, and may show itself at any period of life from childhood to old age. It has no connection with syphilis.

Pathology.—The anatomy of leprosy has been studied by Danielssen and Boeck,† Virchow,‡ Neumann,§ Kaposi,|| Carter,¶ and others, with similar results. The disease consists in a deposit of new material, made up of cells similar to those encountered in lupus and in syphilis. The patches of infiltration and tubercles have been examined in all stages of development. Their structure differs somewhat as they are recent or old formations. When cut into, well-formed tubercles present a firm, yellowish or reddish, finely granular surface. The mass has its seat mainly in the

* New York Med. Rec., 1881, vol. i. p. 212.

† *Traité de la Spedalskhed*, avec un Atlas de 24 planches coloriées. Paris, 1848.

‡ *Loc. cit.*, Bd. ii. p. 512.

§ *Loc. cit.*, p. 362.

|| *Loc. cit.*, vol. iv. p. 172.

¶ *Trans. Med. and Phys. Soc. of Bombay*, 1862, New Ser., vol. viii.; *Trans. Lond. Path. Soc.*, vols. xiii. and xiv.

corium, but often extends down into the subcutaneous connective tissue. As a rule, it is not circumscribed, but inclines to spread out in the form of a diffused infiltration or as irregular processes. It consists of a delicate net-work, containing numerous, small, rounded, indifferent cells, closely packed together. According to Kaposi, in the younger tubercles the infiltration is not uniform, but consists of small foci, which are most numerous around the thick-walled bloodvessels, glands, and hair-follicles. The older the tubercles or patches of infiltration, the more numerous, uniformly and densely crowded do the cells become, the intercellular substance finally almost completely disappearing. As the process advances, the epidermis, hair, sebaceous and sweat glands all atrophy, and in time become more or less obliterated. Ultimately the tubercles incline to soften, disintegrate, and break open into chronic, superficial or deep ulcers; their course may be compared to that of the gummatous syphiloderm, although more sluggish.

The nerves of the body undergo marked and peculiar changes. They have been fully described by Virchow* and others. The long nerves, as the ulnar or median, are, as a rule, chronically inflamed and swollen here and there along their course. The color is apt to be altered, being in place of the normal color grayish or of a smoky tint. The nerve is also generally firmer than normal. The neurilemma is usually more or less changed, and is at times hardened. The most important lesions, however, are observed in the septa within the nerve fasciculi, and in the interstitial substance, between the nerve fibres, and consist of a deposition of highly refractive, densely packed cells. These changes about the nerves account for the clinical symptoms of hyperæsthesia and anæsthesia which are so conspicuous in the disease.

Diagnosis.—In countries where the disease is endemic, even the premonitory symptoms would be regarded with suspicion, while the appearance of the cutaneous eruption would leave no room for doubt; but not so in districts in which the disease occurs sporadically. The symptoms, however, taken as a whole, are of so marked a character that if they be borne in mind it will be almost impossible to err in the diagnosis.

The macular and tubercular varieties are liable to be mistaken

* Loc. cit., Bd. ii. pp. 522, 523.

for syphilis.* The eruption, in its early stages, may resemble the macular or papular syphiloderm. It will be found to differ, however, in the lesions being usually larger and more irregular both in size and in distribution. The erythematous patches of leprosy are often as large as the hand, and show signs of firm infiltration throughout the skin. The pigmentation is also peculiar, being of a dusky yellowish or brownish hue. The patches, moreover, have a smooth, glazed appearance. The tubercles assume various sizes and forms, but are for the most part larger than those of syphilis, being not infrequently the size of hazel-nuts or even of walnuts. They are apt to be irregularly shaped and unevenly raised above the surface, and are darker than those of syphilis. Their course, moreover, is usually slower than that of syphilitic lesions. The general expression of the face (the usual seat for this form of the disease) is peculiar, the tissues being all more or less infiltrated with the new growth, giving a swollen, ugly, leonine appearance to the features seldom seen in syphilis.

Later in the course of the disease the tubercles and infiltrated patches break down, and become superficial or deep ulcers, covered with adherent blackish crusts, less bulky, as a rule, than those of syphilis. With ulceration come other characteristic symptoms of the disease, as anæsthesia, distortion of the hands and feet, absorption of bone tissue, atrophy, and other symptoms denoting profound constitutional infection.

The yellowish, roundish patches of macular leprosy are not to be confounded with vitiligo. The diseases may be distinguished without difficulty by bearing in mind that in vitiligo the health is generally good, and that the patch of disease consists of simple absence of pigment with usually a border of an increased amount of coloring matter; the skin, moreover, is normal in texture and in sensibility, and smooth, the pigment change being the only sign of disease. The macules of leprosy, on the other hand, consist of infiltrated skin having the form of a distinct deposit of lardaceous-looking substance, which is generally firm and either markedly

* A case of leprosy resembling syphilis, occurring in a Cuban gentleman, came under my observation in this city some years ago. The disease had been seen by a number of physicians, who viewed it as an ulcerating tubercular syphiloderm. For the report of this case, with photograph, see *Phot. Rev. of Med. and Surg.*, vol. i. p. 72.

hyperæsthetic or anæsthetic. Macular leprosy is also to be distinguished from morphœa, an affection of an entirely different nature. Morphœa is unattended by symptoms of constitutional disorder, the general health being usually good. The patches, moreover, differ from those of leprosy in being normal in sensibility, as well as in their course, which is one usually tending sooner or later to spontaneous recovery.

Treatment.—This has proved extremely unsatisfactory. The many remedies which have from time to time been employed need not be enumerated: suffice it to say that they have proved powerless. As yet no specific has been found. The remedies usually now used, however, are of undoubted value in improving the general condition of the leper. The plan of treatment from which the greatest benefit has been derived is that which looks to the improvement of the general health. Change of climate and of residence is the first point to be attended to. A temperate and bracing climate should, if possible, be selected. The individual should at once seek a new home. Strict hygienic rules should be adopted, including proper exercise and frequent bathing. The subject of the nutrition of the body should also receive attention. The diet should be of the most nourishing kind. Tilbury Fox speaks well of quinine, and reports having obtained favorable results from its use in full doses. According to Brosse, Hoàng Nàn is a much more effective remedy for the fever than quinine. Iodide of potassium, iodine, arsenic, mercury, and cod-liver oil may also be administered, with a view to producing an alterative effect. Electricity is also of value. Symptoms are to be treated as they may arise.

Several remedies, much employed in countries where the disease is endemic, deserve special mention. They are Hydrocotyle Asiatica, Chaulmoogra oil (*Oleum Ginocardiæ*, from *G. odorata*), Gurjun oil (wood-oil, from *Dipterocarpus*), and Hoàng Nàn (powdered bark of *Strychnos Gauthieriana*). Chaulmoogra oil is best given in emulsion or in milk, in doses of five, ten, or more minims, beginning with a small dose and gradually increasing the quantity. Hillis* speaks favorably of it, and quotes Liveing, Cottle, and Young, all of whom derived benefit from its employment in

* Leprosy in British Guiana, p. 218. London, 1881.

a number of cases. Young,* of the Mission Hospital at Bombay, reports six illustrated cases, out of between fifty and sixty, treated by Chaulmoogra oil during eighteen months, five of which were markedly relieved. Piffard and Sturgis† also derived very decided benefit from its use in a case. Improvement, as a rule, occurs in less than two months. According to Dougal,‡ Espinet,§ and Hillis,|| Gurjun oil is even more valuable. Espinet concludes his report with the statement that "among the eleven patients submitted to the Gurjun oil treatment, only four followed it up regularly, but all four have improved both as regards their leprous symptoms and general health." According to the official report on the employment of Gurjun oil at the Leper Asylum, Mahaica, British Guiana,¶ of thirty-two patients submitted to the treatment during nine months, "a very great improvement in all the symptoms occurred in sixteen of the cases; eight had their symptoms ameliorated, and one case so far recovered that he was enabled to return to his family and friends. In all, twenty-five cases out of the thirty-two were much benefited." In a more recent report Hillis gives the history and treatment of a number of cases in which the remedy was used, concluding his remarks by repeating a statement made several years before, that in Gurjun oil we have "a most valuable medicine for the treatment of leprosy in all its forms; one capable of retarding the ravages of the disease, in some cases apparently curing it."**

Another remedy without doubt of value is Hoàng Nàn, which is said to contain brucia and strychnia, and more of the former than of the latter. According to Brosse,†† it is best given in three grain pills, one, two, or three being taken daily. Its use may be continued indefinitely. In appropriate doses it is a laxative; but in too strong doses the contrary effect is said to be produced. Brosse speaks in terms of high praise of the remedy.

* Practitioner, Nov. 1878.

† New York Med. Rec., July 10, 1880.

‡ Report on the Treatment of Leprosy with Gurjun Oil. Calcutta, 1874.

§ Report on the Employment of Gurjun Oil in the Treatment of Leprosy at the Leper Asylum at Trinidad. 1876.

|| Loc. cit.

¶ By John D. Hillis, Brit. Med. Jour., April 26, 1879.

** Loc. cit.

†† New York Med. Rec., 1881, vol. i. p. 305.

The local treatment is also important. Baths, medicated, as with iodine or sulphur, or simple, are of service. A number of remedies are used for the purpose of relieving the lesions of the skin, most of which are stimulating and tend to promote absorption of the infiltration.* Blistering, painting with iodine, and the mercurials, especially the acid nitrate, are of some value. The oil of cashew-nut, Gurjun oil, and Chaulmoogra oil, in the form of inunctions, are all highly recommended. The first of these has been used extensively by Beauperthuy.† Gurjun oil may be made into an emulsion with lime-water, one part to three; and Chaulmoogra oil into an ointment, twenty or more grains to the ounce.

Prognosis.—This is extremely unfavorable, for it is only in those cases in which the patient is able to devote every effort to the treatment of his disease that improvement is to be expected, and even in many of these cases the result is unsatisfactory. The sooner the disease is recognized and placed under treatment, the greater the hope of relief; after it has become disseminated throughout the tissues, the prognosis is dire.

FRAMBÆSIA, called also YAWS, PIAN, and ENDEMIC VERRUGAS, is an endemic disease, characterized by general and cutaneous symptoms, occurring in the West Indies, particularly Jamaica and Dominica, in South America, in the Fiji Islands, in Ceylon, and along the east coast of Africa. It is occasionally encountered in our Southern States, especially Louisiana.‡ The affection has received study at the hands of Milroy§ and Imray, of Dominica; Bowerbank,|| of Jamaica; Hutchinson;¶ and Ward, of Peru.** I shall describe the cutaneous symptoms only. The eruption

* For a list of the remedies employed, as well as for a large amount of interesting material relating to the disease, see the Leprosy Report of the College of Physicians. London, 1867.

† See Bakewell's report, *Med. Times and Gaz.*, 1870, vol. i. p. 550.

‡ See report of Prof. Jones to Louisiana State Board of Health, 1881, p. 195; also *New Orleans Med. and Surg. Jour.*, March, 1878.

§ Report on Leprosy and Yaws in the West Indies, by Gavin Milroy, M.D. London, 1873.

|| Quoted in Tilbury Fox's work on Diseases of the Skin.

¶ Catalogue of the New Syd. Soc. Atlas of Skin Diseases, Part II, p. 145. See also Plate XLI.

** *Trans. of the Internat. Med. Cong. of Phila.* Phila., 1877.

consists of variously sized reddish papules, tubercles, and tumors, which are usually present in all stages of development. They begin as pin-head sized, hard, red points, and later they reach the size of split peas, and resemble in appearance red currants or small raspberries. As they grow they incline to become flat on their summits and to be studded with yellowish points. In time they enlarge to the size of cherries, become softer in consistence, and are apt to break down and to ulcerate, discharging a thin, fetid, yellowish fluid. The lesions, although usually roundish and semiglobular, may be of any shape; at times they coalesce, forming patches of a vegetating or fungoid nature. The appearance of the eruption varies with the stage of the disease; also with the color of the patient, whether black or white. According to Dr. Imray, "if yaws are observed as they first make their appearance on the surface, one or more minute whitish or yellowish points or spots will be perceived, not larger than a pin's head. These yellow spots are seen very distinctly on the dark skin of the negro. Gradually the spots enlarge, and begin to project from the surface, retaining for the most part their circular form, and have much the appearance of small globules of yellow pus." The same writer compares the typical tubercles to a "piece of coarse cotton wick, a quarter of an inch, more or less, in diameter, dipped into a dirty yellow fluid, and stuck on the skin in a dirty, scabby, brownish setting, and projecting to a greater or less extent," which, although not so elegant a comparison as that of the strawberry, he believes to be more exact. Mr. Hutchinson, who reports a case occurring in an Englishman, compares the appearance of the lesions to red currants, with flat tops, of a bright-pink color, glassy, and semi-transparent, but possessing the consistence of a raspberry rather than that of a currant. Larger formations, he adds, look not unlike small cherries. The surface of the tubercles varies; it may be smooth or slightly scaly, or in a state of ulceration, covered with thin yellowish fluid and crusts.

The eruption generally manifests itself on the face, on the upper and lower extremities, and about the genitalia, the largest growths occurring on the lips, eyelids, toes, and genital organs. The lesions show no regularity of distribution. They are, as a rule, neither painful nor itchy. The course of the disease is variable; it may continue for months, or, if neglected, for years. The disease is

considered by most observers to be contagious.* It is probably not hereditary. It has no relation to syphilis. The treatment, according to Dr. Imray, "is as simple as it is usually effective," a view likewise entertained by Dr. Milroy and others. It consists in attention to cleanliness, hygiene, good food, and judicious use of tonics. Locally, the lesions are best treated with a carbolic acid solution or with a weak nitrate of mercury ointment.

PELLAGRA, known also as RISIPOLA LOMBARDA, MAL ROSSO, MAL DE LA ROSA, and LOMBARDIAN LEPROSY, is an endemic, constitutional disease, characterized by a chronic inflammation of the skin, of an erythematous nature, accompanied usually with derangement of the digestive tract and cerebro-spinal symptoms. The eruption is confined to those parts which are commonly exposed to the sun, as the backs of the hands and feet, arms, legs, chest, and neck. The skin becomes reddish, and is the seat of violent burning sensations, which are greatly aggravated by exposure to the sun. The inflammation may be superficial or deep-seated. Later the epidermis begins to desquamate, leaving a reddish, shining, often fissured surface. According to Rayer,† the inflammation may be intense, the epidermis rising into vesicles or large, irregularly-shaped bullæ, succeeded by crusts. In other cases the epidermis becomes thickened, hard and dry, yellowish or brownish in color, without having been preceded by redness or burning. The symptoms are at their height during the summer, subsiding with the advent of winter, and returning the following year, usually in an aggravated form. Marked disturbance of the health may occur with the cutaneous manifestations, consisting of loss of appetite, thirst, nausea, indigestion, pains in the abdomen, with diarrhoea or constipation. The patient becomes debilitated and feverish, and loses weight. In addition, nervous symptoms, characterized by vertigo, pains in the head and spinal cord, delirium, convulsions, loss of memory, loss of muscular power, and melancholia, often follow. The course of the disease is variable; it

* On this question a paper of Dr. Nicholls may be consulted, *Med. Times and Gaz.*, vol. i., 1880. Several other articles giving much valuable information concerning the disease, by Drs. Bowerbank and Milroy, may be found in the same volume.

† *Treatise on Diseases of the Skin.* Eng. trans., London, 1835.

may continue several years or indefinitely. It is usually amenable to treatment, but among the poorer classes frequently proves fatal.

It is endemic in the northern districts of Italy, especially Lombardy and Tuscany; it is also met with in Southern France and in Spain. It is said to occur also sporadically in other countries, as in Roumania. It occurs chiefly among the poorer population, notably those pursuing agricultural occupations. It attacks both sexes, but is commoner among women, and manifests itself chiefly in middle age; but it is said to occur at all ages, and even in children and infants. The cause of the disease has long been the subject of discussion, although it is now generally conceded that it is produced by the use of diseased (ergoted) maize, which the inhabitants of the pellagrous districts consume in large quantities as an article of food. According to Haberlandt,* it is due to the rancid oil of the maize. It has also been attributed to malaria, bad hygiene, extreme poverty, bad water, and like causes, all of which are usually found to exist where the disease is endemic. The sun is the exciting cause. The treatment is directed against the general condition.

SYPHILODERMA.

Syn., Syphilis Cutanea; Dermatosyphilis; Syphilis of the Skin.

Under this term are included the various manifestations of syphilis upon the skin. The syphilodermata, or syphilides, as they are also termed, are numerous and constitute an important group of symptoms. They occur in a variety of forms, presenting themselves, in fact, in the different lesions common to other cutaneous affections. They may occur at any period in the course of the disease, giving rise either to but slight inconvenience, or, on the other hand, to serious disfigurement or deformity. Before describing them in detail, there are certain general features, characteristic of the group, which require consideration. Although these vary as to the degree in which they are expressed, they are nevertheless of significance and of value in a diagnostic point of view. They may be referred to under the following heads.

GENERAL SYMPTOMS.—These, as a rule, are absent. With the exception of the syphilitic fever, which ushers in the secondary

* Quoted by Neumann, loc. cit.

stage of the disease, and especially the erythematous syphiloderm, there are rarely any signs indicative of systemic disturbance. Slight fever, loss of appetite, weakness, rheumatoid pains of the muscles, aching of the bones, especially of the ulna and tibia, and headache, usually confined to one lateral half of the head, are occasionally noted to precede certain of the diffused eruptions; but more often they are not experienced, the eruption manifesting itself without constitutional symptoms. The patient in the majority of cases enjoys average general health.

CONCOMITANT SYMPTOMS.—Other signs of syphilis are ordinarily present. In the early eruptions, the chancre or its scar, induration of the inguinal glands, engorgement of the cervical glands, sore throat, alopecia, and mucous patches about the mouth and genitalia, may be looked for; one or more of these symptoms will usually exist during the first three or four months. With the later eruptions, those occurring after the first year, osteoepic pains, bone lesions, permanent alopecia, and other symptoms pointing directly to syphilis, will often be present.

SEAT.—They confine themselves to no particular region. All parts of the integument are liable to their invasion. The different forms of eruption, however, have decided preference for certain localities. The earlier eruptions are generalized more or less over the entire body, while the later lesions are less numerous and are widely distributed. The erythematous syphiloderm is observed to show itself most markedly upon the trunk; papules are prone to develop about the genitalia, and at the back of the neck; tubercles are frequently encountered upon the face and back; while the palms and soles are the usual seats for the papulo-squamous manifestation. Symmetry is, as a rule, noted in the earlier, diffused eruptions only; later, the distribution of the lesions is generally irregular.

MULTIFORMITY OF THE LESIONS.—They assume a great variety of forms of primary eruption, manifesting themselves as macules, papules, pustules, tubercles, and blebs, together with numerous modifications. Of these the papule is the most common. They have a marked tendency to appear associated together. They either succeed one another, or, as is more usually the case, several make their appearance at the same time. Thus, macules and papules are frequently simultaneously present; likewise papules

and pustules. At times, especially in the early eruptions, a number of different lesions, including macules, maculo-papules, pustules, vesico-pustules, scales, crusts, and fissures, are disseminated over the surface. Polymorphism is more apt to be observed in the earlier than in the later lesions, although it may occur in these also. The lesions undergo evolution without fixed laws, a papule, for example, either remaining such, undergoing modification, or becoming a pustule. Thus, they observe no regularity of course.

CONFIGURATION OF THE LESIONS.—The earlier lesions tend to assume a rounded form, but later they possess a marked disposition to appear in a circular, semicircular, crescentic, or serpiginous arrangement. This is particularly the case in regard to the later manifestations, as, for instance, recurrent papules, and tubercles. The latest lesions, however, when single, often preserve in a marked degree the rounded form.

COLOR.—The color varies according to the lesions, the stage of development, and also the subject, whether of light or dark complexion. The earlier lesions are at first of a pinkish red, but of a more subdued, duller tint than that of the other exanthemata. As the freshness fades, the lesions gradually assume the so-called syphilitic hue. Sometimes they possess it from the beginning. The syphilitic tint—which, however, cannot be regarded as characteristic, being shared by other diseases, as, for example, lupus vulgaris and psoriasis—is most pronounced in papules and tubercles. It may be described as being either of a pale or dull brownish red or a dull yellowish red, or copper color. The brownish-red hue, likened also to the color of a slice of lean ham, usually finds its expression in papules, while the coppery tint is more apt to be observed in tubercles.

COURSE.—No laws as to time govern the evolution of the lesions of syphilis; but their course is usually slow. They may not uncommonly be observed to pass from one to another, as, for example, papules into pustules. They possess a marked inclination to recur from time to time. They are cold or non-inflammatory in character, and in this respect differ from the inflammatory diseases, some of which they so frequently resemble in appearance.

SUBJECTIVE SYMPTOMS.—It is only rarely that they are accompanied by itching or burning sensations. As a rule, no subjective symptoms are present. Not infrequently, indeed, the

patient is first made aware of their presenee by seeing or feeling them. If, however, they be subjected to external irritation, as frietion, sweat, or other irritants, itching may occur. The small papular and pustular syphiloderm at times proves an exeception to the rule, being not infrequently accompanied by itehing. On the scalp the disease is also occasionally the seat of itehing. The lesions are rarely aecompanied with pain. Ulcers, however, if connected with bones, or when upon the extremities, especially the legs, often pain considerably, and sometimes exceessively.

SYPHILODERMA ERYTHEMATOSUM. — (*Syn.*, Erythematous Syphiloderm; Macular Syphiloderm; Erythematous Syphilide; Syphilis Cutanea Maculosa; Roseola Syphilitica; Exanthematous Syphilide.)

This consists in the formation of maeules of various sizes and shapes, appearing as a general eruption. The lesions are upon a level with the surrounding skin, or are very slightly raised, and disappear under pressure. In size they vary from a split pea to a finger-nail. In shape they are somewhat irregular; they may be roundish, ovalish, or, rarely, eireinate. Their outline is for the most part ill defined; but change of temperature, especially to cold, is apt to cause them to stand out more prominently. Some are always better defined than others. As usually seen, they give to the skin a mottled or marbled look. They are of a pale or dull pinkish or reddish color, which, however, varies considerably with their age, and also with the natural complexion of the individual. At first they are of a delicate rosy huc, and may be readily effaced by pressure; later they become somewhat darker, usually passing into a dusky-pink or purplish tint, which is for the time permanent. As they fade away they take on a pale, dirty-yellowish, grayish-brown or coppery shade. In number they are always multiple; they may exist sparsely, or, as is usually the case, in profusion, and at times to such an extent as completely to cover the whole surface. Where they are present in large numbers they may run into one another.

As a rule, they first show themselves in the neighborhood of the umbilicus, soon extend to the thorax, and later upon all parts of the body, but they are always particularly well marked about the trunk and flexor surfaces of the limbs. The palms and soles often

exhibit them; the backs of the hands and feet, however, only rarely. The face frequently escapes. They evince no disposition to form into patches, circles, or other arrangement; they appear without order of distribution.* The eruption is unaccompanied by symptoms of heat or itching, except when it comes out suddenly over large tracts; frequently the patient is unaware of its presence until it has existed for some days.

The erythematous syphiloderm is the earliest of the syphilodermata. It generally makes its appearance from the sixth to the eighth week from the date at which the initial lesion, or chancre, was first noticed; at times, however, it shows itself at a much later period, occasionally as late as the second year, when it may assume the circinate form. Its appearance is retarded by treatment. It may show itself with or without systemic disturbance; often it is ushered in with malaise and slight fever of short duration, the so-called syphilitic fever. It is usually accompanied by other signs of syphilis, as the chancre itself or its scar, engorged cervical ganglia, erythema or mucous patches of the fauces, pains about the body, especially the joints, alopecia, and superficial scaling of the palms and occasionally of the soles.

The development of the eruption is usually slow, several days or a week elapsing before it reaches its height, though individual patches reach their full size in a few days; at times, however, it breaks forth with rapidity and violence. Its appearance may be hastened by undue excitement or over-exertion; sometimes it is brought out by a hot bath. Its duration is variable, depending on the degree of hyperæmia and upon treatment; it may last a few weeks, a month, or longer. It fades away gradually, unattended, as a rule, by desquamation, leaving a slight grayish, brownish-yellow, or yellowish pigmentation of the skin, which in turn likewise slowly disappears. Relapses may occur during the first year, the eruption being generally less copious. It is encountered more frequently than any other form of syphilitic eruption. It is very common, probably occurring in almost all cases of syphilis, although frequently escaping observation. It varies, however, exceedingly in the degree of its development; at

* A representation of the usual form of the efflorescence may be found in Plate J of my Atlas of Skin Diseases.

times it is pronounced, while in other cases, as stated, it is so slight as to escape detection. Treatment, as a rule, causes it to vanish rapidly.

The diagnosis is ordinarily not difficult. It is to be distinguished from measles, r \ddot{o} theln, and urticaria; from the eruptions due to certain drugs, especially belladonna, bromine, copaiba, cubebs, iodine, mercury, and quinine; and from tinea versicolor, and the simple erythemata. The absence of febrile and catarrhal symptoms, and its course, will serve to prevent its being confounded with measles. The eruption of measles, moreover, is peculiar, being crescentic in form, and blotchy. R \ddot{o} theln, or German measles, is characterized by small, roundish, often confluent, pinkish or reddish patches; is, moreover, preceded by pyrexia symptoms, and is accompanied by slight inflammation of the mucous membranes, as in measles. The eruption fades on the fourth or fifth day. It is an epidemic disease, and usually occurs in young children. Urticaria may always be known by its sudden appearance, the presence of wheals, the short duration of the eruption, and the constant and marked feature of itching. The efflorescence following the ingestion of copaiba or cubebs consists of isolated or confluent urticarial patches, reddish in color, of short duration, and dependent upon the use of these drugs; decided itching, moreover, is usually present. The grouping and localization of the other medicinal eruptions, the fever usually attending their appearance, which is commonly sudden in its advent, and the history, will usually serve to render the diagnosis easy. The macules of tinea versicolor become at times pinkish, reddish, or brownish yellow in color, and, where they happen to be small, numerous, and disseminated, may resemble the syphiloderm; but upon close inspection they can scarcely be confounded.

SYPHILODERMA PAPULOSUM.—(*Syn.*, Papular Syphiloderm; Papular Syphilide; Syphilis Cutanea Papulosa.)

This is characterized by the formation of papules, which vary greatly as to size, shape, distribution, and course. The appearances presented are altogether different as the lesions happen to be small or large, acuminated or flat, disseminated or grouped. The various stages through which they pass, moreover, and the modifications to which they are subject, give rise to symptoms which render a separate description of them necessary.

Small Papular Syphiloderm.—(Syn., Miliary Papular Syphiloderm; Lichen Syphiliticus.) This form consists of an eruption of disseminated or grouped, more or less confluent, small or minute papules. They are pin-head or millet-seed sized; are distinctly elevated; and have a firm or solid, somewhat harsh or rough, feel. In shape they are rounded and acuminate. Their summits may be perfectly smooth or covered with fine scales; not infrequently slight pointed pustulation may be noticed, especially in those through which a hair protrudes; while small, well-defined miliary pustules, in varying numbers, may complicate the eruption, such a combination of lesions being by no means uncommon.* The lesions are sometimes bright in color, and when in profusion, occurring as an early general eruption, may be of a vivid hue; but later they become darker or of a brownish red. The eruption is apt to be well marked, and usually occupies a large amount of surface, either in a disseminated manner or in groups, thickly studded, constituting at times almost solid patches. It is often seen about the shoulders, arms, trunk, and thighs.

It may be either an early or a late manifestation; occasionally it appears during the third or fourth month, in other cases not until later, after other lesions have occurred. It has a chronic course, and is often rebellious to treatment. It is, I think, more commonly met with in men than in women. Relapses are common. Large flat papules, as well as moist papules, may often be found existing at the same time upon other regions of the body.

It may be mistaken for keratosis pilaris in those cases where the papules are minute, pierced by a hair, and disseminated in great numbers over the body and extremities, especially in the colored race. It also bears a close resemblance to lichen scrofulosus and to psoriasis punctata. It is not to be confounded with papular eczema. It may usually be diagnosed by the presence of other symptoms of syphilis.

Large Papular Syphiloderm.—(Syn., Lenticular Papular Syphiloderm.) The lesions here are large flat papules, different in size, shape, and general characteristics from the miliary lesions. In size they vary from a small split pea to a large finger-nail. In shape

* A representation of both lesions occurs in the case portrayed in Plate L of my Atlas of Skin Diseases.

they are generally circular or ovalish. They are firmly seated in the skin, are more or less raised above the surrounding tissue, and have a flat surface. To the touch they are firm and circumscribed. In their early stage they are usually smooth and free of exfoliating epidermis. Their color is a pale or deep dull-red, variable as to shade, but generally showing the raw-ham tint; at times they are so dark as to have a brownish or violaceous color. They are usually present in numbers, although seldom to the extent of the small papules. They may show themselves upon all parts of the body, either as a disseminated or as a localized eruption. They also tend at times to group, and to form patches. The forehead, region of the mouth, nape of the neck, back,* flexor surfaces of the extremities, scrotum, labia, perineum, and margin of the anus, are all favorite localities for their development.

The eruption is one of the commonest of the syphilodermata. It may be the earliest manifestation, or it may first occur later. It may also appear in later years as a relapse. It is generally encountered closely following the erythematous form, and may even appear simultaneously. The lesions, as a rule, develop themselves slowly, in the course of a few weeks, and attain to various sizes; they are usually present in all stages of growth. Once formed, they are apt to remain for weeks or months. They are more amenable to treatment than the miliary papules. They are to be diagnosed from the lesions of acne and lichen ruber planus. Other symptoms of syphilis will almost invariably be present.

Large flat papules undergo more or less modification according to the locality in which they exist, while other influences also cause them to become altered in general appearance and in form. These changes are of so marked a character as to call for special description. They are not infrequently so complete as to mask the original lesion. Their recognition may thus become a matter of difficulty. As they progress in their course they may either continue as typical lesions, and as such sooner or later pass away by absorption, or they may metamorphose in the following manner. At times they become soft and spongy, and incline to disintegrate. When this occurs, they lose their form, and usually sink to the level of the

* See Plate A A in my Atlas of Skin Diseases.

surrounding skin. From one cause or another they may also show signs of excoriation, when slight crusting takes place; but marked ulceration seldom occurs. Fissures not infrequently exist, and are sometimes deep and painful. They are usually observed about the angles of the month, the anus, and other parts exposed to motion. The commonest change of the papule, however, is into the

Moist Papule.—(Syn., Mucous Papule; Mucous Patch; Broad, or Flat, Condyloma; Plaque Muqueuse.)

This takes place upon those regions where opposing surfaces and natural folds of skin are subject to more or less contact, as, for example, the nates, perineum, genitalia, groins, axillæ, umbilicus, and beneath the mammæ in women. Parts influenced by excessive glandular secretion, either of sebum or sweat, as about the spaces between the fingers and toes, are also liable to be invaded. The lesions differ from the large, dry papules in that they are more or less moist, and are covered with a grayish, mucoid secretion, consisting of macerated epidermis. They are also flatter than dry papules, and are often without defined outline. They vary in consistence, but are generally soft or spongy. Not infrequently they coalesce, producing patches of considerable size; about the genitalia large surfaces are often so involved.

Instead of becoming flat, they may take on action which results in the formation of luxuriant, hypertrophic, warty, papillary growths, when they are designated "hypertrophic" or "vegetating" papules. This manifestation constitutes the VEGETATING SYPHILODERM, known also as SYPHILIS CUTANEA VEGETANS. The lesions assume an elevated, more or less circumscribed, warty character, resembling the raspberry or cauliflower formation. Between the papillary growths there may be slight ulceration, accompanied with offensive secretion, which drying forms yellowish or brownish crusts. They are most prone to occur on the face, on the scalp, about the shoulders, and near the genitals, and are not to be confounded with acuminated or venereal wart. (See *Verruca acuminata*.) Their secretion is contagious, although not auto-inoculable; they are, however, observed to multiply abundantly in those regions favorable for their development simply by the presence of the irritating secretion. They are notable for the rapidity with which they develop and increase in size. They constitute a luxuriant growth. Heat, moisture, friction, unclean-

liness, all contribute to their development. They are amenable to treatment. Local measures usually act promptly in causing them to disappear.

To return to the dry papules. Frequently after having fully developed, or even in their early stage, another and different process may be established, namely, that of desquamation. When this takes place, they become "squamous papules." The modification is a very common one, and constitutes the

Papulo-Squamous Syphiloderm.—(Syn., Squamous Syphiloderm; Syphilis Cutanea Squamosa; Psoriasis Syphilitica.)

It presents different appearances as it occurs in one locality or another, and according to the arrangement of the lesions. They may be isolated, grouped, or closely packed together forming patches. They are generally flattened, and are covered with a dry, grayish, adherent scale. This may be thin and scanty or relatively abundant, although seldom so luxuriant as in psoriasis. If the scales be removed, elevated or flattened, diffused or circumscribed papules, pale or dull red in color, are usually detected. The eruption is rarely extensive; may show itself upon any portion of the body, with preference, however, for the palms and soles; and is remarkably persistent in its course.

Owing to the peculiarity in the structure of the skin of the palms and soles, the disease assumes an appearance here altogether different from that seen elsewhere. It is known as the PALMAR and PLANTAR SYPHILODERM, and is entitled to special description. The lesions often partake of the nature of macules rather than of papules, yet the characteristics are such as to permit of no doubt of their being modified papules. They are slightly raised above the level of the surrounding skin, and, as a rule, are ill defined. In size they vary from a split pea to a finger-nail. In shape they are irregular, and, on account of their tendency to coalesce, are seen in the form of roundish, serpiginous, or crescentic patches. They are covered with dry, scanty, semi-detached, grayish flakes of epidermis. These are adherent, and are most abundant about the edge of the patch, where they are ragged or have a wrinkled or dried-up appearance. If they be removed, the surface beneath will usually be of a dull-red, raw-ham color. At times the exfoliation takes place abundantly and presents a dis-

tinety squamous patch; it may either be cast off or may remain upon the surface, in which event it may give a hard, horny coating to the part. Sometimes the upper layers of the epidermis covering the sole, and less frequently the palm, become the seat of small punctate epithelial concretions, from which corneous masses may be dug out; or they are perforated with minute holes, with clear-cut, punched-out edges. The condition constitutes the *SYPHILIDE CORNÉE* of French writers. In other cases little or no desquamation occurs, the patch presenting more of an erythematous look. The patches may be either hard or soft to the feel, according to the form in which the lesion shows itself; the more circumscribed the papule or deposit, the greater will be its firmness. In addition to the lesions described, fissures usually exist, extending at times deep into the corium.

The eruption is usually symmetrical, and is apt to appear in the centre of the palm or sole, upon the ball of the thumb, and about the volar surfaces of the fingers. It rarely attacks the backs of the hands or feet; nor does it usually spread extensively, as, for example, over the wrist. Occasionally, however, when a large patch has formed in the hollow of the hand or upon the sole, the disease extends itself by a distinctly elevated crescentic border. As it invades healthy tissues the parts formerly attacked remain subacutely inflamed and more or less scaly. The whole palm or sole, together with the skin between the fingers and toes, may be thus involved. Sometimes the lesions progress in this manner up the inner side of the foot towards the ankle, and also around the radial and ulnar borders of the hand, generally, as stated, avoiding the dorsum, and seldom passing beyond the wrist. The eruption may be limited to a small patch the size of a coin, or it may involve the greater part of the surface. As a rule, neither heat nor itching is present. Its course is exceedingly chronic, frequently lasting months and years. It may appear either as a comparatively early or as a late manifestation. If it occur upon only one hand or foot, it is apt to be a late eruption, often years after the initial lesion.

The papulo-squamous syphiloderm is liable to be confounded with eczema and psoriasis, and also with callosity. From eczema it may be distinguished by the absence of heat, itching, and discharge, the two former of which symptoms are almost always present in eczema. The course of the eruption, and its history,

will also be of assistance in the diagnosis. It often resembles psoriasis very closely, whether occurring upon the trunk, extremities, or palms and soles. The differential diagnosis may be stated as follows: the syphiloderm is almost invariably confined to adult age, being the result of acquired syphilis; psoriasis frequently manifests itself in early life, usually before the age of twenty. In connection with the syphiloderm there is generally some clue to the initial lesion of syphilis; on the other hand, in psoriasis the characteristic history of psoriasis is ordinarily obtainable.

The patches of the syphiloderm show no tendency to adopt a system of configuration; they may take upon themselves any pattern as to form, usually varying their shape according to locality. Frequently, however, the lesions composing the patch assume a circular or semicircular arrangement, usually more noticeable where the eruption is limited in extent. Psoriasis, on the other hand, generally inclines to assume some definite pattern. The edges of the patches of the syphiloderm are generally elevated, and possess a marked line of demarcation, the disease terminating abruptly against the healthy skin. This margin may often be detected by passing the finger over the surface, and is the line of the syphilitic deposit. Upon the palm or sole it is generally less defined than on other parts of the body. The edges here, as a rule, are only slightly raised, but are apt to be covered with thin, filmy, shrivelled scales. In psoriasis, the elevation of the patch and its border are due to the scales; if these be thoroughly removed, a red, shining surface, not much, if at all, raised above the level of the skin, is observed.

The syphiloderm, except when it attacks the palms and soles, and even here it is subject to variation, has no tendency to occur symmetrically. Psoriasis, on the other hand, generally manifests a disposition to symmetry. The syphiloderm ordinarily confines itself to one portion of the body, the amount of surface involved being usually small in extent; sometimes, however, it is extensive. It rarely occurs upon the elbows or knees. Psoriasis attacks remote parts of the body simultaneously, and has a strong predilection for the elbows and knees.

Both the syphiloderm and psoriasis may invade the palms and soles; both diseases may also appear exclusively upon either the palms or soles, the rest of the body remaining entirely free.

When psoriasis, however, exists upon the palms or soles, it is common to see it at the same time on other regions. When the syphiloderm, on the other hand, attacks the palms or soles, it is the rule to find no trace of it elsewhere. Slight itching may be present with the syphiloderm, particularly if seated on the trunk, but rarely to such an extent as to cause the patient to scratch. Psoriasis is apt to be attended with more or less itching; at times it is even severe. The syphiloderm is usually slow in its course; psoriasis is generally a more active process, sometimes extending itself rapidly.

The syphiloderm manifests itself in the form of a deposit in the skin; in psoriasis there is no deposit, but simply a hyperplasia of the cells of the rete, producing hyperæmic or inflammatory symptoms. This difference in the pathological structure of the patches is generally appreciable even to the naked eye, and constitutes one of the most valuable diagnostic signs between the diseases. Exclusive of the scales, there is but little thickening of tissue in the ordinary patch of psoriasis; in syphilis there is decided infiltration throughout the skin. But care must sometimes be exercised in discriminating between the thickening due to inflammatory swelling and that arising from syphilis.

The syphiloderm usually consists of more than one kind of lesion, a variety indeed being at times observable, composed of papules, fissures, ulcers, and scales; in psoriasis all the lesions show the same pathological characters, the patch being made up of a circumscribed more or less inflammatory surface covered with scales. The color of the syphiloderm is usually less vivid than that of psoriasis, and often has a dull, smoky, brownish-red tint.

The scales of the syphiloderm have a grayish or yellowish, often dingy, dried or shrivelled look; in psoriasis they are generally whitish, and have the appearance of being recently formed. In syphilis they are produced slowly, and exist scantily; in psoriasis they are formed rapidly, and are usually present in quantity. In syphilis, moreover, the scales are adherent; in psoriasis they are non-adherent or loose, and are easily detached from their bed. The syphiloderm may usually be denuded of its scales without provoking blood; the psoriatic patch will bleed much more easily under the same circumstances. These points of difference are all valuable for diagnosis. In syphilis the papules may break down

and show signs of moisture or even superficial ulceration ; in psoriasis the process is a dry one throughout its course. Finally, in doubtful cases, treatment will aid in the diagnosis. The syphiloderm, though persistent and stubborn in its course, when once entirely removed by treatment is not apt to return ; the tendency of psoriasis is to recur at intervals through life.

SYPHILODERMA VESICULOSUM.—(*Syn.*, Vesicular Syphiloderm ; Vesicular Syphilide ; Syphilis Cutanea Vesiculosa.) This is a rare manifestation. Vesicles are very seldom encountered in syphilis. In the majority of instances, so-called syphilitic vesicles may be more properly viewed as early pustules ; occasionally, however, the lesions are of such character throughout their course as to be entitled to the term vesicular. The few examples that I have seen occurred in hospital practice, and in women. The eruption has been described at length by Bassereau* and Hardy.†

The lesions vary in size, form, arrangement, and distribution. They may be small, pin-head sized, more or less acuminated, and disseminated or grouped, or split-pea sized, flat or semiglobular, with or without umbilication. The small, miliary vesicles manifest themselves as irregularly grouped or disseminated lesions, inclining to involve the hair-follicles, and are succeeded by minute, yellowish, granular crusts. They frequently pass into miliary pustules. The larger vesicles are apt to occur as a disseminated eruption, and show a disposition to assume the form of the vesicle of varicella, whence the term **VARICELLA-FORM SYPHILODERM**. The lesions here are usually split-pea sized, slightly umbilicated, contain a clear or cloudy fluid, are surrounded with a more or less marked pale-reddish areola, and, considering their vesicular character, are remarkable for their persistency, at times remaining days without undergoing appreciable change. They may be discrete or confluent. At times they group in an ill-defined crescentic manner. They are succeeded by small light-yellowish or grayish-yellow crusts.

The eruption shows itself in localities where the skin is natu-

* *Traité des Affections de la Peau symptomatiques de la Syphilis.* Paris, 1852.

† *Leçons sur la Scrofule et les Scrofulides et sur la Syphilis et les Syphilides.* Paris, 1864.

rally thin, as on the face and about the genitalia. It is rarely extensive in its distribution, nor are the lesions apt to be numerous. Its course is usually rapid. The lesions terminate either in absorption or in rupture and slight crusting. It seldom exists alone, papules, either large flat, or small, being also usually present over other regions of the body. Other signs of syphilis are generally present. As originally pointed out by Bassereau, it is an early eruption, occurring during the first year, and usually within the first six months.

SYPHILODERMA PIGMENTOSUM.—This affection, the **PIGMENTARY SYPHILIDE** of the French, has been described by Hardy* and Fournier,† two accurate observers, and more recently in our country by G. H. Fox‡ and I. E. Atkinson.§ It consists of a more or less circumscribed pigmentation of the skin, in the form of roundish, ovalish, or irregularly shaped, split-pea or finger-nail sized, discrete or confluent macules. They are on a level with the surrounding skin, and have a smooth surface; they are, in fact, simple pigmentary deposits. They are not preceded by hyperæmia, nor do they follow upon the site of other syphilitic lesions, a view which is likewise shared by Atkinson. They have a pale-grayish or brownish-yellow, coffee-with-milk color, and are sometimes surrounded by skin which is whitish or paler than normal, causing them to stand out more conspicuously. Not infrequently the color is so faint that the lesions may for a time escape detection. They often have the appearance of being dirt-marks rather than disease. They are generally faint and ill defined, and are apt to coalesce, forming a delicate net-work, or a more or less broken, marbled patch of discoloration.

The affection is unaccompanied by subjective symptoms. It is most frequently encountered on the neck, upon one or both sides; according to Fournier, it occurs here as often as twenty-nine times out of thirty. It is also occasionally met with on the thorax, abdomen, and limbs. It is peculiar in that it shows itself almost exclusively in women, being met with in men only in those possess-

* Loc. cit., p. 175.

† Leçons sur la Syphilis, étudiée plus particulièrement chez la Femme. Paris, 1873, p. 422.

‡ Amer. Jour. of Med. Sci., April, 1878.

§ Chicago Med. Jour. and Exam., Oct. 1878.

ing thin, transparent, delicate skins. It is encountered during the latter half of the first and in the second year of the disease, and is a rare manifestation. It is much commoner in France than in this country.

Its course is slow. It may continue two or three months or from one to two years. It is uninfluenced by antisyphilitic treatment, neither mercury nor iodide of potassium having any effect in causing its disappearance. Notwithstanding this peculiarity, the manifestation is, according to both Hardy and Fournier, unquestionably due to syphilis. Fox regards it as of syphilitic origin, but not as a direct manifestation of syphilis, and hence considers that it should not be classed among syphilitic lesions. In nature it is a simple pigmentary formation, probably differing in no way from chloasma. It may be mistaken for chloasma uterinum, vitiligo, and tinea versicolor. From the latter disease it may be known by its having a smooth, non-desquamative surface.

SYPHILODERMA PUSTULOSUM.—(*Syn.*, Pustular Syphiloderm; Pustular Syphilide; Syphilis Cutanea Pustulosa.) The pustular syphilodermata constitute a large and important group. Although not so common as the erythematous and papular manifestations, they are nevertheless very frequently encountered. They appear in a variety of forms, the lesions of which differ in size, shape, number, distribution, and other features. Before describing these in detail I shall speak of them as a group.

The pustules vary greatly in size. They may be no larger than a millet-seed, or, on the other hand, they may be split-pea sized or as large as a finger-nail. In shape they likewise vary; at times they are circular, in other cases they are ovalish or irregular in outline. In form they are acuminate or rounded, as in acne and variola, or flat, as in ecthyma. They may be seated upon distinctly indurated papular bases or surrounded by extensive areolæ, in which latter event they are but little elevated above the level of the surface. They vary greatly as to number; they may be few or very numerous. They may, moreover, be disseminated or grouped; usually they are dispersed over the surface without regularity of distribution. They either begin as pustules, or, beginning as papules, vesicles, or vesico-pustules, sooner or later become pustules, which in a variable time terminate in crusting. From the decided inclination to crust which the larger pustules evince early in their

course, they have been termed "pustulo-crustaceous" lesions. The crusts usually begin to form shortly after the lesions manifest themselves, but sometimes they form simultaneously with the pustules. As a rule, the larger the pustule, the sooner will the process of crusting begin. The crusts either correspond in size and shape with the pustules which have preceded them, or they may be contracted and smaller than the original lesion. They may be acuminate or broad; raised and bulky or flat and superficial. In consistence they are either soft, or, as is usually the case, firm or hard. The larger and more bulky crusts incline to become stratified, like the exterior surface of an oyster-shell. In color they vary from yellow to brown or even black, and when of any size and depth incline to assume an olive-greenish hue. Beneath the recent crust there always exists an ulcer; this may be superficial or deep, according to the general character of the primary lesion. The edges are usually sharply defined, giving the lesion a punched-out appearance. The base is generally covered with an abundant, grayish, yellowish or greenish, puriform secretion. The pustular lesions are followed by pigmentation, and usually by marked cicatrices. As regards the time at which they manifest themselves, they may be either early or late eruptions. They may be benign or malignant. The following varieties may be described:

Small Acuminated Pustular Syphiloderm.—(Syn., Miliary Pustular Syphiloderm.*)

The pustules are millet-seed in size. They are raised above the level of the skin, and are seated upon small or minute, reddish, papular elevations. They are acuminate in form, and contain an exceedingly small amount of fluid, more or less puriform in character, which in time dries into adherent yellowish crusts. After the crust has fallen off, slight desquamation or exfoliation is apt to take place, which usually manifests itself in the form of a delicate, thin margin or fringe of epidermis around the base of the lesion, constituting a grayish ring or collar, the so-called "collerette" of the French. The hair-follicles are commonly involved, the hairs penetrating through the centre of the lesions.

The eruption is almost always abundant, the pustules existing

* Herpetiform Syphilide of the French.

in great numbers, either discretely or confluent, irregularly disseminated or in groups, over various regions. Sometimes they are arranged in the form of more or less well defined circles and semi-circles. It usually invades a large tract of surface; at times, however, it is localized, as often occurs in the case of a relapse. The extremities, especially the arms and thighs, the chest, and the back are its favorite localities. With the eruption are usually found miliary papulo-pustules and papules; not infrequently these are numerous, and show the various stages of the evolution of the pustule from the papule. Miliary vesicles, as well as large flat papules, may also be present.

The miliary pustular syphiloderm may occur either as the earliest eruption, six weeks after the initial lesion, accompanied with fever and other general symptoms; or, as a later secondary manifestation. Relapses may occur. It disappears leaving a deep pigment deposit of a purplish or brownish color. After the lesions have passed away, minute pin-point or pin-head depressions in the skin remain, which in time generally become effaced. The diagnosis is not difficult. Other symptoms of syphilis usually accompany the eruption.

Large Acuminated Pustular Syphiloderm.—(Syn., Acne-form Syphiloderm; Acne Syphilitica; Variola-form Syphiloderm.)

The eruption is characterized by small or large split-pea sized, more or less acuminated pustules, similar in general features to those of simple acne, or of variola. The crusts, which form sooner or later, are yellowish or brownish yellow in color, small and thin or bulky, and seated upon superficial ulcers. It may develop itself rapidly with fever, or slowly. In the first case the small red spots rapidly become papular and then pustular, the lesion reaching its full development within from twenty-four to forty-eight hours. In the subacute form the lesions for several days look like papules upon the summits of which a minute quantity of pus slowly forms. In the acute form the lesions usually occur in large numbers, and are generally disseminated. In the subacute form the lesions are less numerous, more localized, and more likely to be grouped than in the acute form. They are met with upon the scalp, face,* and trunk; more rarely upon the extremi-

* See Plate V in my Atlas of Skin Diseases.

ties. Other syphilitic lesions are apt to be present, as, for example, papules.

It is one of the earliest of the pustular syphilodermata, and, as a rule, pursues a rapid and benign course. It is one of the rarer manifestations. I have encountered it more often in the colored than in the white race, and in either race chiefly in hospital practice. It is to be distinguished from acne, from the eruption of the iodide of potassium, and especially from variola, for which it is frequently mistaken. In the colored race it not infrequently closely resembles variola, and the diagnosis is often difficult. In doubtful cases a few days should be allowed to pass before pronouncing an opinion.

Small Flat Pustular Syphiloderm.—(Syn., Impetigo-form Syphiloderm; Impetigo Syphilitica; Pustular Eczema-form Syphiloderm.)

The pustules are generally small, flat, and grouped into an irregularly-shaped patch. Crusting begins almost immediately, rendering the lesions markedly pustulo-crustaceous. The crusts are more or less adherent; and are thick, bulky, uneven, and irregularly heaped up. They are dry, and incline to become granular and to crumble. In color they are yellowish, greenish yellow or brownish yellow, resembling the crusts of pustular eczema. Where the pustules have coalesced, a continuous sheet of crust is apt to form, as in pustular eczema. The ulcer beneath the crust may be superficial or deep.

The eruption is usually encountered about the face, especially around the nose and mouth and on the hairy parts of the face, on the scalp, and around the genitalia. It is generally benign; but it may assume a malignant action, the ulceration extending deeply, and spreading over considerable surface in a more or less serpiginous manner. The affection resembles pustular eczema, and may readily be confounded with it, especially on the scalp, if the character of the erosion or ulcer be not taken into consideration. The diagnosis can scarcely be made from the appearance of the crust.

Large Flat Pustular Syphiloderm.—(Syn., Ecthyma-form Syphiloderm; Ecthyma Syphiliticum.)

This appears in the form of large, finger-nail sized, flat pustules, seated upon a deep-red base. The pustules seldom remain

as such for any length of time, but incline to crust immediately. Two varieties are met with, the superficial and the deep. In the former the crust is flat, roundish or oval, adherent, and of a yellowish-brown or dark-brownish color. It is seated upon a superficial ulcer or erosion, having a grayish or yellowish, abundant secretion. The lesions are usually numerous, and may appear upon any part of the body, although they have preference for the back, shoulders, and extremities.* It is one of the commoner pustular manifestations, and runs a benign course. It is apt to occur in the first year, and generally after the sixth month.

The deep variety possesses a raised and more bulky crust, which inclines to become conical, is harder in consistence, and has a dark-greenish or blackish color, and when prominent and stratified, in the form of an oyster-shell, constitutes the condition known as *RUPIA*. This form of crust, it must be remembered, is also met with in connection with the bullous syphiloderm. *Rupia*, therefore, may be the result either of the pustular or of the bullous eruption. Beneath the crust the ulcer is seen to be excavated, defined in outline or punched-out in appearance, and to be covered with an unhealthy, greenish-yellow, puriform secretion. It is a late and malignant manifestation. In my experience, it is seldom met with outside of hospital practice.

SYPHILODERMA TUBERCULOSUM.—(*Syn.*, Tubercular Syphiloderm; Tubercular Syphilide; Syphilis Cutanea Tuberculosa.) The eruption here consists of one or more solid elevations of the skin, varying in size from a split pea to a hazel-nut. They are circumscribed, rounded in form, acuminate or semiglobular, and have usually a smooth, often glistening surface. They are firm to the touch, and are deeply seated in the skin and subcutaneous connective tissue. In color they are deep red or brownish red, and at times they have a dull yellowish-red or distinctly copper tint. Sometimes they have an intensely smoky-red hue, a color not met with in any other disease of the skin.

They may be either single or multiple, usually the latter, although they rarely occur in great numbers. If small, they are more apt to be numerous. They seldom appear over the whole body, but are generally confined to certain regions. They may be

* See Plate D in my Atlas of Skin Diseases.

either disseminated or grouped; when in large numbers they tend to form more or less solid tubercular patches. As to their arrangement, they may be either irregularly disposed or grouped in the form of segments of circles and semicircles. When the latter arrangement occurs, the patches are very apt to coalesce, forming a serpiginous tract of disease, the eruption being known as the SERPIGINOUS TUBERCULAR SYPHILODERM. The regions commonly invaded are the various parts of the face, the back, and, more rarely, the extremities.

They are, as a rule, unaccompanied by pain, heat, or itching. Their development is slow, usually extending over weeks or months. They are in the majority of cases a late manifestation, rarely showing themselves before the second year, and generally not until later. Not infrequently they do not appear until five, ten, or even twenty years after the initial lesion. Other symptoms of the disease will almost invariably have occurred before they manifest themselves.

They disappear in two ways, by absorption or ulceration. They may ulcerate superficially or deeply,—usually the latter. The process may begin upon their summits or in their interior, the result being a more or less complete destruction of the lesions. The ulcer is usually a deep, punched-out cavity, with irregular edges, horseshoe or crescentic in shape, covered with a grayish, yellowish deposit of gummy matter, or with a brownish crust. Ulceration may also attack a patch of grouped tubercles, the result being an extensive excavation, involving at times the whole affected surface. Not infrequently the process assumes a serpiginous course, extending itself in an irregular, more or less serpentine manner. The ulceration here is usually accompanied by a certain amount of simultaneous cicatrization, and is apt to be disfiguring in its results. It is often encountered on the back, and is generally obstinate.

Papillary formations at times spring up from ulcerating tubercles, in the form of wart-like, cauliflower excrescences, accompanied by the secretion of a yellowish, puriform, offensive product, constituting SYPHILIS CUTANEA PAPILLOMATOSA. The entire scalp may be invaded by this eruption, and it is probable that many cases of the so-called frambœsia of older writers were aggravated instances of this variety of syphilis. The same form of growth may occur with the gummatous ulcer.

The tubercular syphiloderm is to be diagnosed from lupus vulgaris, from lepra, and from carcinoma. It is most liable to be confounded with lupus vulgaris. The tubercles of syphilis, however, are firmer, more deeply seated, and have a history of more rapid development. Lupus, moreover, appears usually first in childhood, while the tubercular syphiloderm is rarely seen before adult or middle age.

SYPHILODERMA GUMMATOSUM.—(*Syn.*, Gummatous Syphiloderm; Gummatous Syphilide; Syphilis Cutanea Gummatosa.) This is characterized by a more or less circumscribed formation situated in the subcutaneous tissue, showing its presence upon the surface as a slightly raised, rounded, or flat tumor, variable as to size. It is of moderately firm consistence, but tends in its course to break down. It is known as a "gumma," "gummy tumor," or "syphiloma." It usually begins as a small, pea-sized, soft, ill-defined, painless body, which is felt to be beneath the skin. The skin at this time is not altered in color, nor is the outline of the growth discernible. The deposit increases slowly in volume, until, through a period of weeks or months, it gradually assumes definite shape and consistence. It is now seen to be a more or less rounded tumor embedded in the subcutaneous tissue. The skin becomes involved and appears pinkish or reddish. In size it may vary from a hazel-nut to a walnut or larger. In shape it shows itself as a slightly elevated, semiglobular or flat, uniformly organized body. To the touch it has a soft, doughy, somewhat elastic feel.

Gummata rarely exist in numbers. One or two only are, as a rule, present; occasionally they are multiple, but such instances are of infrequent occurrence. In exceptional cases, where they appear during the early years of the disease, they may be both numerous and symmetrical, and accompanied by well-marked local and general symptoms. They may appear upon any part of the body; their tendency, however, is to develop in the looser and softer tissues, as upon the flexor surfaces of the extremities, abdomen, and sides of the thorax. The palms and soles are rarely attacked.

The gumma tends to break down, ulcerate, and destroy the tissues in which it has its seat. The ulcer is a circumscribed, deep excavation, usually rounded in form, with abrupt, perpendicular edges. It may be the size of a finger-nail or as large as the palm

of the hand. Its bottom is generally uneven, and is covered with a grayish-red gummy deposit. The skin is always completely destroyed; likewise, to a great extent, the subcutaneous connective tissue and sometimes the deeper structures. Disintegration may progress rapidly or slowly. The loss of tissue is often great, although cicatrization usually takes place in such a manner as to leave a comparatively insignificant scar. In place of ulceration, the growth may disappear by absorption.

The gumma is to be distinguished from furuncle and from abscess; from enlarged lymphatic glands; from carcinoma; and from fibrous and fatty tumors. The ulcer will be diagnosed from the non-syphilitic ulcer by its history, depth, sharply defined edges, and punched-out appearance; by the character of the secretion, the absence, as a rule, of pain, and the presence, in many cases, of other symptoms of syphilis.

SYPHILODERMA BULLOSUM.—(*Syn.*, Bullous Syphiloderm; Bullous Syphilide; Syphilis Cutanea Bullosa; Pemphigus Syphiliticus.) The eruption is characterized by blebs containing a clear, watery fluid, which tends to become soon cloudy and thick. At times the lesions even in the beginning partake more of the nature of pustules than of blebs. In size they vary from a pea to a walnut. They are discrete, disseminated, circular or ovalish in form, and are surrounded with a slight areola. They may be fully or only partially distended, but after lasting a variable time they break, the contents drying into yellowish, brownish, or dark-greenish crusts.

The crusts vary considerably in form: at times they are large, bulky, and raised; in other cases they are conical, and furrowed upon their surface like the outside of an oyster-shell, the formation being known as **RUPIA**. (See Large Flat Pustular Syphiloderm.) In other cases they are smaller, flatter, and less bulky. Beneath the crusts, which may usually be removed without difficulty, are seen erosions or ulcers, with sharply defined edges, secreting a greenish-yellow fluid. They are followed by more or less pigmented cicatrices. The course of the eruption is variable, depending materially upon the general condition of the patient.

It is a late manifestation, and is usually accompanied by other symptoms of the disease. It is rare, and is seen for the most part upon cachectic, broken-down individuals. It also occurs in the

new-born, as the result of inherited syphilis, when it often closely resembles pemphigus vulgaris. (See Hereditary Syphilis.) The character of the blebs and of the subsequent crusts will serve to distinguish it from pemphigus; other signs of syphilis, moreover, will usually be noted.

SYPHILODERMA HEREDITARIUM INFANTILE.—The cutaneous manifestations of hereditary syphilis in the infant present a somewhat different appearance from those of acquired syphilis, and are therefore entitled to separate description.

Syphilis in the new-born may be hereditary; that is, the child may have become infected *in utero* through the influence of the mother or father, or of both parents; or it may be acquired, the disease being contracted at any period after leaving the uterus, either during delivery or after birth. When acquired, it runs precisely the same course as in the adult. The terms “congenital” and “infantile” syphilis are indefinitely used to express the existence of the disease, without reference to its having been inherited or acquired. The distinction, however, should if possible be made.

A child the subject of hereditary syphilis may be born either apparently sound or in an obvious state of disease. The majority of syphilitic infants are born to all appearances healthy, the disease not showing itself until a later period,—in almost all cases, however, within the first three months. According to Diday,* who has collected 158 reported cases of hereditary syphilis in infants, the disease manifested itself before the end of the first month after birth in 86 cases, and before the completion of the second month in 45 cases, while in the third month there were but 15 cases. It will be seen from these statistics that the disease usually makes its appearance before the end of the second month, and that after the fourth month the chances are in favor of the child having escaped infection. On the other hand, infants may come into the world with the imprint of syphilis stamped upon them in the form of the maculo-papular or bullous eruption, or with the general signs of syphilitic cachexia and marasmus. These cases rarely live longer than a few days or weeks.

* A Treatise on Syphilis in New-born Children and Infants at the Breast, p. 101, New Syd. Soc. Trans. London, 1859.

When the child is born with a clean skin and apparently healthy, syphilitic symptoms are not apt to manifest themselves before the second or third week, and often not until later. The child during this period either remains well or shows signs merely of general debility. At birth the infant may be stout and well nourished, or spare, puny, and delicate. Usually in the course of two or three weeks it begins to exhibit unmistakable evidence of failing in health. It grows thinner and weakly, is fretful, or cries peevishly, wastes away, and becomes greatly changed in appearance. From a well-nourished infant it has in a short time become emaciated and plainly diseased. The skin assumes a peculiar dingy, yellowish, earthy or muddy hue. The cutaneous tissues are deprived of their fat; the bones are prominent; while the skin is harsh, dry, thin, and more or less wrinkled, forming lines and furrows, which are apt to be particularly noticeable about the face. These changes give to the little patient a pinched, wizened appearance, resembling that of an old man or woman.

One of the first specific symptoms noticed is coryza, which is usually present at this stage of the disease. The discharge at first is thin and watery, but becomes thicker and tenacious, gradually accumulating in the nasal passages. In a short time the nares become stopped up, slight crusting taking place around the orifices; the breathing is interfered with; and a peculiar snuffling noise is heard, which is characteristic. At times the nostrils are occluded to such an extent that breathing can take place only through the mouth, in which event it is with difficulty that the child is able to suck. Later, the discharge from the nares becomes more or less sanious and has a penetrating, fetid odor, and mucous patches appear about the nares and around the mouth. If the disease continue, the small bones of the nose may be involved, caries occurring, with discharge of fragments of bone, followed by deformity of the nose. With the coryza there is generally more or less hoarseness, and at times even aphonia, the throat being attacked in a similar manner by erythema and mucous patches. The cry of the child at this stage of the disease is peculiar.

The lesions upon the skin may manifest themselves before the coryza, simultaneously with it, or later; usually they appear at about the same time. Not rarely, however, the skin is the first tissue attacked. The eruption may appear in the form of ery-

thema, maculo-papules, papules, or blebs, or as a mixture of these lesions. The most frequent manifestation consists of both macules and papules. Not infrequently the first cutaneous symptoms are erythematous patches varying in size from a finger-nail to the palm of the hand, occupying the buttocks, thighs, or genitalia. They are irregularly shaped; have a more or less indistinct outline; are yellowish, brownish red, or coppery in color; and are somewhat shining or are covered with a thin, wrinkled epidermis. They are either dry or squamous or slightly moist and exoriated. At times the patches are extensive and involve the whole of the lower portion of the trunk and the thighs in one continuous sheet of erythema. The coloring in these cases is not infrequently of an intense, deep yellowish red. The early stage of this manifestation often closely resembles simple erythema intertrigo, so much so that the diagnosis may be difficult. It may also resemble erythematous eczema, and an opinion should not be expressed hastily. In a short time the lesions become more marked, the patches become thickened, and distinct macules appear here and there over the surface, which either remain such or pass into flat papules. In other cases the palms and soles are first attacked by the erythema, the epidermis beginning at once to exfoliate in the form of thin, dry, ragged pieces or layers. It will thus be noted that the erythematous syphiloderm of hereditary syphilis differs considerably in appearance from that of acquired syphilis.

Usually in the course of a few weeks the erythematous patches become the seat of broad, flat papules, the size of a split pea or finger-nail, the eruption thus becoming maculo-papular. This may be considered as the commonest syphiloderm in the infant. The papules exist as both dry and moist lesions, the latter form predominating, especially about the genitalia and natural folds of the skin. They are usually large, not infrequently of the character rather of patches of infiltration; often but slightly raised above the level of the surrounding skin; and are smooth and glazed, or are covered with a pellicle or scale.

The moist papule, or mucous patch, is one of the earliest symptoms of hereditary syphilis; it is also one of the commonest manifestations. These lesions first make their appearance about the nose, mouth, anus, and genitalia. They are also frequently met with about the toes and fingers, umbilicus, axillæ, backs of

the ears, and in other natural furrows of the integument, particularly where friction, heat, and moisture are apt to exist. Together with moist papules occur fissures, secreting a viscid or sanious product, which tends to crust and to mask the true lesion. Papules, moreover, not infrequently excoriate, break down, and ulcerate superficially.

Mucous patches occurring in the mouth may be confounded with aphthæ, or thrush, which often bears a close resemblance to the syphilitic lesions. Aphthæ may be distinguished by being seated upon an inflammatory base, and by their oval or circular shape with distinct margins and areolæ. They usually occur in successive crops and in groups, and are, moreover, generally attended by gastric derangement. The affection is due to a vegetable parasite, the *oïdium albieans*, which may be demonstrated under the microscope, thus, in doubtful cases, determining the diagnosis.

The bullous syphiloderm in the infant usually manifests itself at birth. It may, however, first show itself later. It consists of variously sized, disseminated, flat or semiglobular, circular, ovalish, or irregularly-shaped, distended or flaccid blebs. They possess a decided disposition to attack the palms and soles, the fingers and toes, and the limbs. They show no regularity of form, and are usually present in all stages of development. Their contents may be clear, cloudy, or sanious. They are seated upon reddish, unhealthy-looking skin, and are sometimes surrounded by slight areolæ. They may be present in large numbers, or they may be sparse. Sooner or later they break, or are ruptured by violence, and show an excoriated or ulcerated reddish base, which is slow to take on reparative action. At times the lesions break down into ulcers, which are not infrequently met with on the joints of the fingers and toes.

The course of the eruption varies with the general condition of the patient. New blebs are apt to come out from time to time, while the older ones become pustular, rupture, and are succeeded by excoriated, unhealthy-looking surfaces. Other cutaneous lesions, as moist papules and patches about the genitalia and other regions, mucous patches in the mouth, fissures and discolorations of the skin, are also usually present; in some cases, however, the blebs are the only skin lesions encountered. Other general symp-

toms of the disease may almost always be found. The bullous syphiloderm in the infant is a grave manifestation, the patient rarely surviving.

Pathology.—The anatomy of the syphilodermata has received careful investigation by Auspitz,* Neumann,† Biesiadecki,‡ and Kaposi.§ The typical syphilitic deposit, as encountered in the papule and in the tubercle, is a new growth, consisting of a small round-cell infiltration, resembling that of lupus vulgaris. The earliest manifestation of syphilis upon the skin, the erythematous syphiloderm, is characterized by hyperæmia with incipient proliferation of connective-tissue cells. The process in this stage does not show the specific cell infiltration, this latter first appearing with the papule. The capillaries are chiefly involved in the production of the macule, a proliferation of connective-tissue corpuscles taking place along the walls of the vessels.

The papule presents a marked deposition of the syphilitic material. In the flat papule it has its seat in the mucous layer of the epidermis, in the papillary layer of the corium, and in the body of the corium extending down as far as the subcutaneous connective tissue. The extent and depth of the infiltration vary with the size of the papule. The infiltration is circumscribed and sharply defined both laterally and from the tissues beneath. It is made up of a more or less solid mass of disseminated, numerous, small, round cells, which vary considerably in size and in other characteristics. They show no regularity of distribution, but appear for the most part closely packed together, here and there, within the meshes of the connective tissue. In some cases they are so numerous as almost completely to obliterate all signs of the normal structures. In the process of absorption, which takes place as the papule is about disappearing, the central portion is first absorbed, the papule in this stage assuming a somewhat cup-shaped or scooped form.

* Mediz. Jahrbuch, Bd. ii., 1864, Wien. "Ueber die Zelleninfiltration der Lederhaut bei Lupus, Syphilis und Scrofulose."

† Lehrbuch der Hautkrankheiten, p. 448. Wien, 1873.

‡ Beiträge zur phys. und path. Anat. der Haut. Sitzb. d. mathem.-naturw. Cl., Bd. lvi., Abth. ii. Wien, 1867.

§ Die Syphilis der Haut und der angränzenden Schleimhäute. Wien, 1874-75.

According to Kaposi, in the moist papule, or flat condyloma, there is the same infiltration occupying the same structures and extending itself occasionally into the subcutaneous layers. It is likewise sharply defined as to outline. The papillæ here are decidedly enlarged, swollen, and lengthened into finger-like prolongations, and at times formed into two or more club-shaped extremities. The mucous layer is also highly developed and much thickened.

The pustule, like the papule, is also well defined, the deposit occupying the corium, and, in some instances, the subcutaneous connective tissue. According to the size, character, and stage of the pustule will the appearances of the infiltration be somewhat different. As stated by Kaposi, the essential features of the pustule consist in the presence of dimly-contoured, highly granular, cloudy, nucleated cells and free nuclei within the uppermost layer of the corium, papillary layer, and rete, seated in a succulent, large-meshed, serum-saturated tissue or even in open spaces. The tubercle and gumma present the same characters as the papule, the infiltration extending itself, however, more widely and deeper into the cutaneous tissues. The elements concerned are the same as in the papule. The extent to which the formation is circumscribed, and the depth of the infiltration, will of course depend upon the size and form of the growth. The deposit ultimately disappears either by absorption or by ulceration.

Treatment.—The treatment of the syphilodermata is that of syphilis, the manifestations upon the skin being but one group of the many symptoms which take place in the evolution of the disease. For a complete exposition of the treatment of the disease, the reader is referred to the admirable works of Fournier,* Bumstead and Taylor,† and Keyes.‡

CONSTITUTIONAL TREATMENT.—In entering upon the treatment of syphilis, the importance of a systematic course of medicine, the length of time required to bring about the best results, the nature of the disease, the tendency to relapses, and the ad-

* *Leçons sur la Syphilis étudiée plus particulièrement chez la Femme.* Paris, 1873.

† *The Pathology and Treatment of Venereal Diseases.* Phila., 1879.

‡ *The Tonic Treatment of Syphilis.* New York, 1877. See also Phila. Med. Times, Feb. 25, 1882.

vantages of prolonged treatment, should all be clearly stated to the patient.

It is, in the first place, a matter of considerable moment that the patient be brought under the most favorable hygienic influences. The general health is to be carefully looked after throughout the entire course of treatment. The benefits to be derived from leading a regular life should be impressed upon the individual. The mind should not be suffered to dwell upon the disease. In the case of men, the use of tobacco and spirituous drinks should be interdicted, or at least they should be made use of only with the sanction of the physician. Fresh air, proper exercise, relaxation from business, and healthy out-door amusements are to be sought for. Attention to cleanliness is to be enjoined. Baths, in the form of the cold douche or vapor, are useful. The latter especially, indulged in not too frequently, is often a decided adjuvant in the treatment. The diet should be directed by the physician, and should consist, as a rule, of the most nourishing articles, together with wine or malt liquor, as may seem necessary. The bowels demand attention, and if constipated should be kept open by means of one or another of the natural saline aperient waters or by small doses of aloes. In a word, everything should be done to assist nature in coping with the disease.

The two specific remedies employed in the treatment are mercury and iodide of potassium. They are the only two remedies that have a direct action on the disease, and their value is inestimable. Of the two, mercury is the more valuable. They are employed either alone or in combination, the indications for the use of one or the other, or for their conjoint use, being found in connection with the age of the disease, the character of the eruption, and the general condition of the patient. I would here state that mercury is a safe remedy, and when employed judiciously may be used without fear of evil consequences. It may be administered in small doses for one, two, or three years without injury to the general health. In this connection it need scarcely be remarked that when given for a long period continuously it is essential that the dose be small, and that salivation be at no time induced. The aim should be to obtain the tonic and not the toxic effect of the remedy.

It may be introduced into the system in a variety of ways.

The usual method, and without doubt the best for the majority of cases, is by the mouth. Patients vastly prefer to be treated by this plan, for obvious reasons; it is, moreover, the most practical method of treatment. A number of the preparations of mercury are made use of; blue mass, calomel, corrosive sublimate, gray powder, the protiodide, the biniodide, and the bityanide, all enjoying reputation. The most active and energetic preparations are the mild chloride and the protiodide. The system may be brought under the influence of the mineral more rapidly by calomel than by any other preparation: hence it is valuable where an immediate effect is demanded, as, for example, where there is grave iritis or serious throat disease. It may be given in one or two grain doses with a quarter or a third of a grain of opium, three or four times daily. A more rapid effect even is to be obtained from oft-repeated minute, fractional grain doses, as an eighth or a twelfth of a grain every hour. The system is usually brought under its influence by this latter method in two or three days.

The protiodide is the remedy perhaps in most general use at the present day. It is given in sixth, quarter, third, or half grain doses, three times daily, usually with extract of lactucarium, hyoseyamus, or gentian, and in pill form. It may also be administered in the form of granules, the centigramme (containing about one-seventh of a grain) granule being a convenient strength. Those made by Garnier and Lamoureux are reliable. It is an active preparation, and at times is irritating. Not infrequently, when taken for some time, it induces gastric and intestinal derangement, griping pains, and diarrhoea. These symptoms, however, may be counteracted in a great measure by the simultaneous use of opium or hyoseyamus.

Blue mass and gray powder are both mild and comparatively slow in their action, and are valuable preparations. They are among the least irritating of the mercurials; this is especially true of the latter. Gray powder is the most desirable of all the mercurials for infants and children. The dose for adults is from one to three grains thrice daily; for infants, half a grain or less, twice daily. Quinine may be advantageously combined with it. Bumstead and Taylor speak well of the blue pill with iron and opium in the early syphilodermata, as in the following prescription:

R Pilulæ Hydrargyri, ℥ii;
 Ferri Sulphatis Exsiccati, ℥i;
 Extracti Opii, gr. v.
 M. Ft. in pil. no. xx. div.
 Sig.—One pill three times daily after meals.

The corrosive chloride acts slowly, and, as a rule, is well borne, manifesting comparatively little disposition to salivate; it is perhaps the least active of all the preparations. It has comparatively little effect in subduing obstinate symptoms. When taken for a time, it tends to produce pains in the stomach and bowels. It is seldom employed in early syphilis, being generally used for the later manifestations. Where iron is called for, it may be advantageously combined with the tincture of the chloride of iron. It may be prescribed with water, alcoholic mixtures, vegetable tinctures or syrups, or may be given in pill form, thus:

R Hydrargyri Chloridi Corrosivi, gr. i;
 Saponis, q. s.
 M. Ft. in pil. no. xvi. div.
 Sig.—One pill thrice daily after meals.

The dose is about one-sixteenth of a grain, three times daily. It may also be administered in cod-liver oil by first dissolving it in a few drops of sulphuric ether, as in the following prescription:

R Hydrargyri Chloridi Corrosivi, gr. i;
 Ætheris Sulphurici, fʒi.
 Solve et adde
 Olei Morrhuæ, fʒviii.

M.—Sig. A tablespoonful contains one-sixteenth of a grain of the mercurial.

If the bottle be kept tightly corked, it may be retained in solution for an indefinite time; but if the ether be allowed to evaporate by exposure to the air, the corrosive sublimate will be precipitated and cannot be redissolved by the addition of more ether.* The bicyanide of mercury, in the dose of from one-twentieth to one-sixteenth of a grain, in pill form with gentian, quinine, or opium, was highly esteemed by Tilbury Fox,† who preferred it to the other preparations.

* Bumstead and Taylor, loc. cit., p. 794.

† Loc. cit., p. 306.

Mercury is also introduced into the system by inunction. It is a valuable method of treatment, and is frequently most advantageously employed. Sigmund, who used mercurial inunctions in 9379 cases occurring at the Vienna Hospital between the years 1842 and 1855, regards this as the simplest and most efficacious mode of treating the various forms of syphilis.* It acts rapidly, and when pushed brings the system under the influence of the remedy in a short time. It is therefore useful in those cases where a speedy effect is desired; in old cases of syphilis; and where mercury is not well borne by the stomach. It constitutes the best method of treating the disease in the infant. The two preparations employed are mercurial ointment, and oleate of mercury, as suggested by Berkeley Hill. The chief objection to the use of inunctions by means of mercurial ointment is the staining of the linen. This, however, may be obviated in a measure by the employment of the oleate of mercury, used in the strength of from five to twenty per centum. Bumstead and Taylor prefer the twenty per centum preparation combined with an equal weight of simple cerate, which forms a consistent mass of a light fawn-color. The oleate is more apt to irritate the skin than the mercurial ointment, and should therefore be used with greater caution. According to Keyes,† it is absorbed more easily than mercurial ointment, and therefore has more effect. In making the applications, the more delicate portions of the skin, and those which are exposed to friction or motion or which are usually covered with hair, should be avoided.

The frictions are made upon various regions, the arms, axillæ, thighs, abdomen, chest, and back being the localities usually selected. Beginning with one or another of these regions, for example, the arms, the other parts are in turn taken up, when the parts that were first rubbed are again subjected to the process. The frictions are performed slowly, with the hand, the operation requiring from fifteen to thirty minutes or until the preparation used has been dissipated. Ordinarily they are made once in the twenty-four hours, the substance employed being allowed to remain on the skin for one or two days before being washed off prepara-

* Die Einreibungsur bei Syphilisformen. Wien, 1878.

† The Venereal Diseases. New York, 1880.

tory to another rubbing. The skin should never be permitted to become irritated; if such be the tendency, new localities must be selected, a weaker ointment employed, or the treatment by this method suspended. The requisite quantity for each friction is from a half to one drachm of the officinal mercurial ointment, and about a drachm of the ten or fifteen per centum oleate of mercury. For infants the mercurial ointment should be weakened by mixing with one, two, or more parts of lard. Salivation is to be guarded against. If this occur, the applications should be suspended, and the body cleansed with soap and water. The mouth and teeth should be kept clean by the use of the brush and an astringent lotion, and the bowels kept open.

To obviate the objection to smearing the whole body with greasy matter and the consequent uncleanliness, Sturgis* directs the patient to bathe the feet thoroughly in hot water the night on which the first inunction is made, when half a drachm of the twenty per centum oleate of mercury is rubbed briskly into the sole of the right foot. This is repeated the next night on the left foot, and so on alternate nights the right and the left foot is anointed with half a drachm or a drachm of the preparation. The same stockings, which should be thick, are worn day and night for a week. At the end of this time the feet should be thoroughly cleansed with hot water and soap, and an intermission of three or four days allowed to elapse before renewing the process for a similar length of time. Iodide of potassium may be given by the mouth meanwhile. One of the advantages of this form of inunction is that every movement the patient makes in walking serves to rub the ointment into the skin of the feet, thus permitting absorption to take place.

Mereury may also be administered subcutaneously, by means of the hypodermic syringe and corrosive sublimate dissolved in water, with morphia. Lewin† employs for each injection a fluid consisting of about one-eighth of a grain of corrosive sublimate dissolved in fifteen drops of water with one-tenth of a grain of acetate

* The Student's Manual of Venereal Diseases. New York, 1880.

† Die Behandlung der Syphilis mit subcutaner Sublimat-Injection. Berlin, 1869. For further information, see interesting papers by Wigglesworth, Boston Med. and Surg. Jour., Aug. 26, 1869; and Taylor, New York Med. Gaz., May 13, 1871.

of morphia. The region selected for the puncture is usually the back. The operation is repeated once or twice daily. Bumstead and Taylor recommend this method in cases of early malignant syphilis in which deep ulceration occurs. Fifteen to twenty injections usually suffice to remove the lesions. It is better to make the injections near the patch of disease to be removed, as a certain local effect is usually observed. Iodide of potassium may be given simultaneously by the mouth. Although experience has shown that this method may be employed in certain cases with good result, it has many disadvantages, chief among which are that it calls for much time on the part of both physician and patient; that it is painful; and that it is followed not infrequently by subcutaneous abscesses, and by salivation. Patients, as a rule, object seriously to its use.

The mercurial vapor bath is yet another method, and a valuable one. From twenty to thirty grains of calomel or thirty to sixty of the black oxide of mercury are used at each bath, which lasts about half an hour. The patient, with a long sleeveless flannel night-shirt reaching from the neck to the feet, and covered with a large rubber blanket, sits on a stool under which is the vaporizing apparatus, consisting of a plate having a gutter around its circumference to hold a little water and a hollow in the middle for the mercurial salt. An alcohol lamp under this is arranged to vaporize the water first, throwing the patient into a profuse perspiration, the mercury being volatilized later, and so readily absorbed by the skin. The patient remains covered until he cools off, and then goes at once to bed in his flannel shirt. The plan is cleanly and of easy application. Bumstead and Taylor, Keyes, and Sturgis are all warm advocates of this mode of administering the remedy, and to their writings I refer the reader for a further description of the procedure. For infants the corrosive sublimate bath is serviceable. It is prepared in the strength of from ten to thirty grains to an infant's bathtubful of warm water. The patient is allowed to remain in the bath for twenty minutes.

The selection of one or another of the methods mentioned for administering mercury must depend upon the requirements of the case under consideration, as well as upon other circumstances. The age of the patient is to be taken into account; in infants and young children, for example, the best results are to be obtained

from inunction and the mercurial water bath. The general health, whether stout or weakly and debilitated; the condition of the alimentary canal; and the occupation of the patient, are to be borne in mind. The rapidity with which it is considered to be desirable to bring the system under the influence of the remedy, also whether the patient is to be under continuous observation, or is to be seen only at intervals or irregularly, must decide in favor of one or another method. Throughout the treatment it is of importance to look to the health of the patient. To secure good results it is essential that a high standard of general health be maintained during its employment. In the majority of cases, therefore, tonics are called for, the preparations of iron, arsenic in small doses, quinine, gentian, and like remedies, all being valuable adjuvants in the treatment.

The various vegetable infusions, decoctions, and fluid extracts, as those of sarsaparilla, mezereon, guaiacum, dulcamara, and stillingia, may here be mentioned. They act as diaphoretics, cathartics, and tonics. Their chief value is in syphilis of long standing, in severe and obstinate cases, and in subjects broken down and debilitated by the abuse of mercury or from other causes. The general condition not infrequently improves markedly under their continued use. They are to be viewed as alteratives and tonics. They may be given alone, or conjointly with mercury or iodide of potassium, the most efficacious preparations being Zittmann's decoction and the compound decoction of sarsaparilla.

Opium remains to be referred to as a remedy. Great benefit in some cases is to be derived from its use. It is particularly valuable in the treatment of the ulcerative lesions. The progress of destructive ulcerations may often be arrested by opium after all other means have failed. I have not infrequently seen excellent results from its use. It may be prescribed in doses varying from half a grain to two grains, three times daily, or, in the case of the extract of opium, half the quantity. As a rule, patients tolerate large doses. The mineral acids, especially nitric acid, may also be prescribed with advantage in the later stages of the disease.

The length of time which mercury is to be employed must rest with the case under consideration: no positive rule can be laid

down. I would, however, remark that in the vast majority of cases the remedy is continued for much too short a time. Were its use continued for a longer period, perhaps in smaller doses than is customary, there would, without doubt, be fewer relapses. Unless contra-indicated by some of the ill effects, it may in all cases be given with benefit continuously not only until the disappearance of the symptoms but also for a long period afterwards. During its administration symptoms of constitutional disturbance, as pyalism, and gastric and intestinal derangement, are to be watched for; upon their appearance the dose is to be reduced or the treatment discontinued for the time. The period at which these symptoms may be looked for varies extremely. In susceptible cases the system may be affected in a few days; in another case weeks may be required to bring about this condition.

For early syphilis I am in favor of giving mercury in small doses, and of continuing its use for a long period, intermitting its administration from time to time. To obtain the best results, it should be prescribed according to the following plan, the advantages of which have been ably set forth by Fournier.* It should be given until all the symptoms have disappeared, and for three or four weeks longer, in all probably two months from the commencement of the treatment, when it is to be interrupted for about a month. It is now to be recommenced and continued with for another course of two months, when all treatment may be stopped for two months. At the expiration of this period of rest, a third course is to be undertaken, lasting from six to eight weeks, to be followed, as before, by a two months' respite. The whole course of treatment should extend over a period of at least two years. During the second year it is, in the majority of cases, proper to combine iodide of potassium with the mercury.

Other methods of employing mercury are also recommended by eminent syphilologists. Keyes† advocates unhesitatingly the practice of giving the remedy unremittingly, in small doses, not sufficient to affect the system unfavorably in any way, for a period of not less than two years, making use of the iodide of potassium

* Loc. cit., p. 1080. See a translation by Dr. R. W. Taylor, in the New York Med. Jour., vol. xvi.

† Amer. Jour. of Med. Sci., Jan. 1876, also loc. cit.

when necessary. This plan he calls the "tonic treatment." It is best followed by administering the same drug continuously, and the protiodide of mercury is to be preferred. One-sixth of a grain thrice daily is first given, the dose being increased by one-third every three days until slight mercurialization is manifest. The "full dose" thus reached is maintained until the activity of existing lesions declines, when the "tonic dose," usually about one-third of the full dose, is substituted. This should be given continuously. Six months, or, better still, a year, of entire immunity from symptoms is desirable before the tonic treatment is stopped. When the protiodide of mercury does not agree, blue pill, in half-grain doses, alone or with from one-fifth to one-half a grain of the dried sulphate of iron, may be substituted.* I have found this plan of treatment valuable, and can heartily endorse its efficacy, but it is with difficulty that patients can be induced to continue the remedies uninterruptedly for so long a period.

Still another plan is urged; that of giving full doses of the mineral in rapid succession until slight salivation is induced, when it is withheld for a while. The course is repeated as many times as the case may seem to require. The method has been prominently brought forward by Hunt,† of London.

The so-called bad or injurious effects of mercury are in all cases to be avoided. They comprise ptyalism, tenderness of the gums, fetid breath, metallic taste, stomatitis, diarrhœa and griping pains, and, at times, depression of spirits, loss of appetite, and general malaise. With the manifestation of these symptoms the dose is to be at once reduced or the treatment suspended, as the case may demand. At the present day, owing to the fact that mercury is rarely given in large doses, salivation is not often met with, except

* For further details upon this plan of treatment, reference may be made to Dr. Keyes's treatise, already cited. For valuable information as to the effect of mercury given in tonic doses in increasing the red corpuscular elements of the blood and in promoting nutrition, the reader is also referred to two papers by Dr. Keyes, one on "The Effect of Small Doses of Mercury, etc." (*Amer. Jour. of Med. Sci.*, Jan. 1876), and the other on the "Treatment of Syphilis, etc.," read by him before the International Medical Congress at Philadelphia, 1876, Section of Dermatology, and contained in the Transactions of that body, Phila., 1877.

† On Syphilitic Eruptions, etc., with Special Reference to the Use and Abuse of Mercury. London, 1854.

in persons peculiarly susceptible to the influence of the drug. When slight, it is likely to disappear in a few days on suspending the medication. Much relief, however, may be given by the administration of proper remedies. The bowels if constipated should be freely opened; hot baths may be taken, and the action of the skin stimulated. If the mouth is sore, nourishment should be given in a liquid form. A hot foot-bath with mustard may be taken at night, and an opiate, as, for example, Dover's powder, may be administered to procure sleep. Half an ounce to an ounce of liquor sodæ chlorinatæ in a pint of water may be used as a gargle. In order directly to combat the influence of the mercury no remedy is more efficacious than chlorate of potassium, which may be taken internally to the amount of one to two drachms daily, and should also be employed in solution as a gargle. Sulphur in small doses is highly recommended by Piffard* and others.

Iodide of potassium remains to be referred to. It is a most valuable remedy. It finds its chief use in the later eruptions, as, for example, those which occur in the second, third, and subsequent years. The older the manifestation the more apt is the result to be satisfactory. It is prescribed either with mercury or alone. Decidedly more lasting effects are to be derived from its employment in combination with mercury than when used alone. It is administered either in solution, with wine of iron or with one of the palatable syrups, as syrup of orange-peel, ginger, or sarsaparilla, largely diluted with water. According to Bumstead and others, the action of the iodide of potassium is increased by combination with chloride of ammonium (equal parts). Carbonate of ammonium is also said to render it more efficient as well as more agreeable. The dose, when used alone, varies from five to thirty or forty grains three times daily, the average dose being ten grains. When taken for the first time, it is well to begin with smaller doses, from two to five grains, gradually increasing the amount. It is best administered before meals or about an hour after meals.

The treatment by iodide of potassium and mercury combined, the so-called "mixed treatment," is exceedingly valuable, especially in the second and later years of the disease. The two remedies are usually mixed in the same prescription. They may also be

* Diseases of the Skin. New York, 1876.

given separately and alternately at different hours of the day. The iodide may also be administered internally in connection with mercurial inunction, a plan useful in debilitated subjects, and in inveterate cases, where the stomach is apt to become deranged under the continued use of mercury. The corrosive chloride and the biniodide are the two mercurials ordinarily combined with the iodide of potassium. They are prescribed in from one-thirty-second to one-eighth of a grain, with from two to five or more grains of the iodide of potassium, for each dose, as, for example, in the following formula containing the biniodide :

R Hydrargyri Iodidi Rubri, gr. ii ;
 Potassii Iodidi, ℥iiss ;
 Syrupi Zingiberis, f℥iii ;
 Aquæ, f℥i.

M.—Sig. One teaspoonful three times daily, after meals,
 with a wineglassful of water.

The doses of both mercury and iodide of potassium are to be increased or diminished to suit the demands of the case. The length of time which the iodide of potassium, either alone or with mercury, is to be employed, must vary with the case ; it may, however, be stated that it should be continued for months after the disappearance of the lesions. The unpleasant effects of iodide of potassium consist of iodism, irritation of the mucous membranes, salivation, and a peculiar eruption. Iodism is characterized by fulness in the head, headache, nervous symptoms, ringing in the ears, and general depression. It is only occasionally met with. Irritation of the mucous membranes, taking the forms of slight or severe coryza, with running at the nose, swelling of the eyelids and watering of the eyes, redness of the conjunctivæ, and, at times, pain in the frontal sinuses, is of much more frequent occurrence. Increased salivary flow may also take place, although it occurs rarely in a marked degree. The iodide at times gives rise to eruptions upon the skin which assume the form of erythema, papules, pustules, blebs, and furuncular inflammations. (See *Dermatitis Medicamentosa*.) Iodine, iodide of sodium, and iodide of ammonium are also at times employed with benefit, but they are inferior to the iodide of potassium.

LOCAL TREATMENT.—The local treatment of the syphiloder-

mata consists in the judicious employment of baths, lotions, powders, or ointments. The erythematous syphiloderm in the majority of cases does not require local treatment. Where the lesions persist about the face, however, an ointment of ammoniated mercury, twenty or thirty grains to the ounce, may be used. The mercurial vapor bath proves useful in cases where the lesions over the general surface are obstinate. The papular manifestations may also be much improved by the use of the mercurial vapor bath, or the corrosive sublimate bath, in the strength of from one to three drachms to thirty gallons of water. Sulphur and alkaline baths may also sometimes be employed with advantage. The various mercurial ointments are of decided service in removing papules, and are often applied to these lesions when they affect the face and neck. Ammoniated mercury, a drachm or more to the ounce, and ointment of the nitrate of mercury, from one to four drachms to the ounce, are the most useful. Oleate of mercury, from five to twenty per cent. strength, is even more valuable, and may be employed with marked benefit.

Moist papules in all cases require immediate attention. Strict regard to cleanliness is of the first importance; the lesions should be washed with water and soap several times in the course of the day, and the parts, where the surfaces oppose each other, kept separated by linen. In addition to the cleansing, they may be bathed with chlorinated soda solution or a weak lotion of corrosive sublimate, acid nitrate of mercury, or carbolic acid, after which powdered starch, oxide of zinc, or calomel may be dusted upon them. They may also be advantageously touched with a solution of nitrate of silver. The papulo-squamous lesions may be treated with the mercurial vapor bath, employed once or twice a week. In the localized conditions, as upon the palms and the soles, tarry ointments and the various mercurial ointments may be applied with benefit. The chronic papulo-squamous palmar and plantar lesions, as a rule, require strong applications. The various active preparations employed in psoriasis may be advantageously used. Two drachms of ammoniated mercury to the ounce of petroleum ointment will often be found useful. In the ulcerative affections the crusts are to be removed by poultices or other means, bathed with a lotion of corrosive sublimate or acid nitrate of mercury, and the lesions dressed with one or another of

the mercurial ointments already referred to, or with the "*emplastrum de Vigo cum mercurio*." The tubercular formations call for the same local remedies as the large papules.

CARCINOMA.

Under this head are found the several varieties of cancer which manifest themselves in connection with the integument, both as primary and as secondary affections. Of the primary cancers of the skin, by far the commonest form is that to which the term epithelial cancer is given; and it is this which especially concerns the dermatologist. Fibrous or hard cancer rarely attacks the skin primarily. The melanotic form of the disease, however, is not uncommonly encountered as a primary manifestation. The lenticular, tuberosus, and melanotic varieties may be briefly described as follows:

The first of these, *CARCINOMA LENTICULARE*, so named by Schuh (known also as "scirrhous cancer," "hard cancer," "fibrous cancer," and "connective-tissue cancer"), is characterized by pea, bean, or larger sized, firm or hard, smooth, glistening, dull pinkish-red or brownish-red, flat or raised papules, tubercles, or nodules. They are disseminated, usually occurring over a breast already involved, and, while at first discrete, tend to run together, forming variously sized tubercular masses or, in some cases, fungoid tumors. They almost always appear as a secondary manifestation, and frequently after extirpation of the primary disease, as of the mamma. They are accompanied by hyperæmia of a pinkish or violaceous, dusky shade, and an indurated or hardened, contracted, smooth, glistening state of the integument. The cancerous infiltration spreads itself in various directions and widely, so that in extensive cases the side of the thorax may appear as if encased in armor, constituting "*cancer en cuirasse*." It pursues usually a slow course, accompanied, as a rule, by involvement of the neighboring glands, swelling of the limb, softening and ulceration of the lesions, lancinating pains, and marasmus, terminating generally sooner or later fatally. The disease tends to recur after operation, and hence the prognosis is extremely unfavorable.

The nodular form, designated *CARCINOMA TUBEROSUM*, usually appears in middle life, but may occur earlier, as a primary or a

secondary manifestation, in the form of circumscribed, flat or raised, rounded or ovalish, tubercular or nodular lesions. They are firm or hard, are deeply embedded in the skin and the subcutaneous connective tissue, and are of a dull-reddish, brownish-red, or violaceous color. In size they vary from a pea to a walnut or larger. They are multiple, and are generally disseminated or irregularly grouped, occupying usually the entire surface. Sooner or later they soften and break down into ulcers, the disease in the course of a few years usually ending fatally. It is a rare form of cancer.

The melanotic variety, termed *CARCINOMA MELANODES* or *PIGMENTODES*, generally begins in the form of multiple, small, pin-head, pea, or bean-sized, rounded or ovalish, soft or firm papules, tubercles, or nodules, of an iron-gray, brownish, bluish-black, or blackish color. They are disseminated, and are at first discrete, but as they become more numerous tend to coalesce, forming variously-sized, irregularly-shaped, flat or prominent nodules or masses. Large tumors may thus be formed, which sooner or later soften and ulcerate. Fungoid tumors may also form, which likewise ulcerate, exhibiting a soft or pulsatious, gangrenous, blackish-red, ichorous or bleeding surface. The disease may appear upon any part of the body, but frequently first manifests itself on the hands and feet. It often has its starting-point in or near a pigmentary mole or a wart. The skin and the eye are the two tissues in which it primarily occurs; the internal organs are generally involved secondarily. It is usually encountered in early adult or middle life, and pursues a rapid and malignant course.

· EPITHELIOMA.

Syn., Epithelial Cancer; Cancroid; *Carcinoma Epitheliale*; *Germ.*, Epithelialkrebs; *Fr.*, Epithélioma; Cancroïde.

Symptoms.—Epithelial cancer of the skin manifests itself clinically in three forms, which are very properly designated as the superficial, deep-seated, and papillary varieties.

SUPERFICIAL VARIETY.—This form of the disease, known also as the "flat variety," usually makes its appearance as one or more grouped, small, yellowish or reddish papules or elevations, having their seat in the upper layers of the skin. They may

start from a sebaceous gland, wart, or other growth, or in the form of a flat infiltration. Sooner or later, usually in the course of a few years, the tubercle, wart, or infiltration, as the case may be, shows a disposition to fissure or to excoriate, and to be covered with a slight brownish or yellowish crust, under which may be observed a scanty, watery, or viscid secretion. The course of the disease is commonly slow, years not infrequently elapsing before much progress takes place. In time, however, the deposits increase in size, or new ones appear, and finally break down into superficial ulcers. The ulcer may be no larger than a small split pea when first seen, but it inclines to become larger by degrees, and may ultimately assume the dimensions of a large coin or even the palm of the hand. In shape it is usually roundish; but it may be irregular in outline. Its edges may be sloping or sharply defined, flat or raised, but are not usually reddened or infiltrated, although they are often indurated. The base of the ulcer is reddish in color; secretes a scanty, viscid, yellowish fluid; is disposed to bleed; and has an uneven surface, which is apt to be hard. The amount of pain present varies, but it is rarely marked until the ulcer has assumed considerable size. The further changes which may occur vary. At times the ulcer, having assumed a certain size, ceases to enlarge; in other cases it extends itself and attacks the deeper structures, and passes into the infiltrating, or deep-seated, variety. It may continue for years as a local affection, the patient enjoying excellent general health. The lymphatic glands are not involved.

The disease which was for a long period designated **RODENT ULCER**, and considered as distinct from epithelioma, is a form of this variety of epithelial cancer, as has been shown by Warren,* a view which is also entertained by Hutchinson† and other recent writers. The eyelids are its most frequent seat, and next the sides of the nose. When fully developed, it consists of a circumscribed, sharply defined, greater or less excavation, with a brownish-red or purplish-red, dry or scantily secreting, mammillated surface, the ulcer having often a rolled border. It differs chiefly from

* The Anatomy and Development of Rodent Ulcer. A Boylston Medical Prize Essay. By J. Collins Warren, M.D. Boston, 1872.

† Illustrations of Clinical Surgery, vol. i., Fasc. 1, p. 14. London, 1875.

ordinary epithelioma in its slow course, and in its invading and implicating every tissue with which it comes in contact, including muscles and bones. It is a disease of the upper portion of the face and head, occurring usually above a line drawn across the face horizontally on a level with the *alæ nasi* and the lower border of the ears.

DEEP-SEATED VARIETY.—This form of the disease, known also as the “infiltrating variety,” begins by the formation of a roundish, often conical, tubercle the size of a split pea, having its seat in the skin and subcutaneous connective tissue. It may also start in the form of a wart, as in the case of the superficial variety. The growth is generally raised, and is deeply seated in the tissues. It is reddish or somewhat purplish in color, and is generally surrounded with an areola. It is firm or hard to the touch, and presents signs of extensive infiltration both in the deeper structures and around its periphery. Instead of being prominently elevated, it may extend itself on all sides in the form of a flat deposit, but slightly raised above the surrounding skin. In a shorter or a longer time, usually in the course of months, according to the malignancy of the case, ulceration takes place, which begins either on the surface or in the interior of the growth. The tumor finally breaks up, disintegrates, and an ulcer varying in size, shape, and general characters results. When of any size, it presents a deep excavation in the tissues; is roundish or irregular in shape; and has an uneven, reddish, violaceous, or brownish base, with sloping walls. It secretes a pale-yellowish, viscid fluid; bleeds readily upon being manipulated; and possesses raised, markedly everted, hard, puffed, purplish edges. Infiltration is observed to extend itself for some distance around the cavity, as shown by the induration and the redness of the surface. The destructive process usually progresses rapidly, until finally an ulcer the size of a coin or larger is produced. The disease is now painful, the sharp, lancinating pains, which are commonly present to a greater or less extent even in the earlier stage of the disease, becoming severe. The lymphatic glands enlarge, and at times break down. The patient suffers extremely, and sooner or later succumbs through marasmus and exhaustion. The course of this variety of the disease varies; it may be either slow, or, on the other hand, exceedingly rapid. I well recall the case of a gentleman, sixty-five

years of age, who was under my care from the beginning to the end, in whom the disease ran its fatal course in one year.

PAPILLARY VARIETY.—In the place of an infiltration, as described, the lesion may be a papillary growth. Formations of this character vary as to size, shape, and outline. They may begin as wart-like growths the size of a split pea or finger-nail, possessing all the features of a common wart; or they may appear as larger, coin or palm sized, raised, lobulated, spongy, markedly papillary formations. The appearances vary according to the stage of the process. The surface may be either dry or moist. At times it is covered with a thin layer of horny, dried, yellowish epidermis or scale; in other cases the epidermis is in a state of maceration. Not infrequently the growth gives out a viscid or thick secretion, mingled with blood and whitish cheesy or sebaceous matter. The granulations may be exuberant, fleshy, and uneven, or they may be stunted and flat, inclining to spread out rather than to grow in height. Fissures are usually present, which secrete a semi-fluid, offensive product, composed of epithelial and sebaceous matter, which with blood forms into brownish, adherent crusts. In time the formation, either in places or over its whole surface, shows signs of disintegration, an irregularly-shaped ulcer, with more or less extensive granulations, ultimately forming, which then runs the course of other cancerous ulcers. It may begin as a papillary growth, as stated, or, on the other hand, it may proceed from a previously existing superficial or deep-seated infiltration.

Epithelioma has its seats of predilection. Its most common seat is upon the face. It is encountered upon the lips, more often upon the lower lip, where it appears usually in the form either of the superficial or the deep-seated variety. It is also of common occurrence on the mucous membrane on the inside of the lip, on the tongue, and in the mouth. The nose is also frequently attacked, the disease very often beginning upon the side of the bridge. The cheeks, temples, forehead, eyelids, are also favorite localities. The face is much more prone to be invaded by the superficial than by the deep-seated variety. The genitalia, especially the penis and scrotum in the male, and the labia in the female, are likewise not uncommon seats of the disease; upon the glans penis it is apt to show itself as a papillary growth; upon the scrotum as the super-

ficial form ; upon the labia either as the superficial or the deep-seated variety. Other localities are also liable to the disease. The lesion is usually single.

Etiology.—The exciting causes are often obscure. The disease is apt to have its starting-point in a locally irritated tissue, as, for example, in an excoriation, or about a lip that has been irritated by the use of the pipe or through uncleanliness. Warts of all kinds are the seat at which it very commonly makes its appearance. Nævi, both pigmentary and vascular, are also structures in which it may begin. The disease is encountered much more frequently in the male than in the female. Thiersch found that out of 102 cases collected by him, 80 occurred in men and 22 in women.* Paget's experience is similar ; in 105 cases, affecting regions common to both sexes, 86 were in males and 19 in females.† It rarely shows itself before middle life, commonly not before the age of forty or fifty. It may, however, make its appearance earlier, and cases are on record where it occurred in childhood.

Pathology.—The anatomy of the disease varies somewhat with the form under consideration, and with the stage of the process. According as the growth happens to be superficial, papillary, or deep-seated, will there be more or less difference in the anatomical arrangement and distribution of the pathological formation. As a type of the disease, that which occurs about the lip may be taken. If the growth be incised with a knife, the cut surface is seen with the naked eye to be of a grayish, yellowish, or pale-red color, and to be marked here and there, particularly near the surface, with numerous minute grayish or yellowish points, rounded accumulations, and irregular bands or streaks, which usually occupy a considerable portion of the structure. These formations are the epithelial processes and globes, to be referred to. Upon pressure, the cut surface yields a more or less scanty, watery or viscid, yellowish fluid, together with a whitish or yellowish, firm or soft, cheesy, more or less granular material. This substance may usually be squeezed out of the growth, when it appears in the form of small, rounded, comedo-like plugs. The character

* *Der Epithelialkrebs namentlich der Haut*, p. 305. Leipzig, 1865.

† *Lectures on Surgical Pathology*, 3d ed., p. 733.

of the product obtained from a section will vary considerably with the variety and seat of the disease, as well as with its age: thus, it may be dry, friable, and firm, or soft and semi-fluid. The amount of vascularity also varies.

In microscopic structure, epithelioma consists, as Kaposi * succinctly states it, of "an inflammatory condition of the tissues of the skin, which are infiltrated with lymphoid and proliferating cells, and contain numerous dilated bloodvessels, together with an effusion of serous lymph within the widened meshes. The tissues of the cutis are occupied by a net-work of spaces containing epithelioid proliferation-cells, nests, or globes, and cylindrical processes, formed by the rete mucosum pushing downwards in prolongations, like the fingers of a glove. These divide and unite with similar neighboring projections to form an epithelial framework." The cells may first be referred to. They are of the squamous, or pavement, variety, and differ but little from normal epithelium as met with upon the skin or mucous membrane of the mouth. They present nothing characteristic of epithelioma. They may be arranged in the form either of club-shaped, cylindrical, or conical processes, or of rounded nests, or globes (known also as "concentric globules," "fibrous capsules," "laminated capsules," "onion-shaped bodies," "epithelial nests," "pearl globules," "epithelial pearls," "epithelial globes").

The processes referred to consist of the mucous layer of the epidermis, projected into the connective tissue in the form of long, narrow, finger-shaped growths. The cells are usually greatly crowded, so much so as to constitute solid masses or plugs of epithelium. They vary as to size, and as to the depth to which they penetrate. At times they are so large as to be seen in sections with the naked eye, appearing as streaks and irregular lines running from the surface towards the centre of the growth. They are not infrequently developed in such numbers as almost to obliterate the papillæ. In highly developed epitheliomata they penetrate in all directions, extend deeply into the connective tissue, press upon the surrounding structures, and finally take more or less complete possession of the whole skin. Ultimately they undergo retrograde metamorphosis, ending either in fatty

* Path. u. Ther. der Hautkrankheiten. Wien, 1880.

or in keratoid or colloid degeneration. They either disappear by absorption, or ulceration results and they are exfoliated from the surface.

The epithelial globes are made up of concentrically arranged cells, disposed like the coats of an onion. In consistence they may be solid or soft. The cells composing these masses vary; those in the centre are usually small, roundish, and compressed, while those on the periphery are elongated, dry, and horny. The globes vary in size; not infrequently they are so large as to be readily seen with the naked eye. In form they are rounded or ovalish, and circumscribed. They are found in the cylindroid processes, and also in other portions of the growth. They are not, however, characteristic of epithelial cancer; they may occur wherever epithelium is undergoing proliferation and retention, as, for example, in milium and in sebaceous cyst. The amount of stroma existing with epithelial cancer varies; it is, however, never a marked element, and is seen chiefly in the papillary and deep-seated varieties.

The pathology of so-called rodent ulcer, on which so much attention has lately been bestowed, may be referred to in particular. It has been carefully studied by Warren,* Butlin,† Thin,‡ Tilbury and T. C. Fox,§ and others. According to Warren, the epithelium and papillæ are normal in the early stages of the disease. At this time small lobulated clumps of epithelial cells form just below the surface. Most frequently the cells lie in solid masses in tube- or finger-like prolongations which anastomose more or less freely with one another. The epithelium is small and delicate, like that in the rete mucosum near the borders of the papillæ. Occasionally, however, at certain points the epithelium is larger, and forms the centre of a concentric arrangement of cells, as in the more characteristic forms of cancer. Sometimes alveoli of oblong, circular, or tortuous shape are found filled with these cells, and in the centre sometimes an epidermic globe. The cancer cell-masses may at points be continuous with the interpapillary epithelium. Warren has never been able to discover any connection with the sebaceous or

* The Anatomy and Development of Rodent Ulcer. Boston, 1872. Also Med. Times and Gaz., 1880, vol. i. p. 499.

† Ibid., p. 23.

‡ Ibid., p. 23.

§ Lond. Path. Soc. Trans., 1879.

sudoriparous glands. With regard to the point of origin of the growth in rodent ulcer, the investigations of T. and T. C. Fox go to show that it begins in the external root-sheaths of the hair-follicles.

Concerning the histogenesis, or the formation and development, of epithelial cancer, there can be no doubt that it generally takes its origin from the normal epithelium of the skin, mucous membrane or glands. Various researches, however, have established the fact that, in addition to the epithelial and endothelial cells, all other form-elements, connective-tissue corpuscles, elements of the vascular walls, muscle cells, and lymph cells, may go to make up the epitheliomatous tissue. Compared with other varieties of carcinoma, epithelioma possesses a decidedly less degree of malignancy, and this a relatively local one.

Diagnosis.—Epithelioma may be confounded with syphilitic tubercles and ulcerations, acuminated warts, lupus, and the rare affection rhinoscleroma. The papule or ulcer of epithelial cancer, especially if about the genitalia, may also resemble the chancre; but attention to the history, to the duration of the lesion, and to other points of diagnostic value, will aid in arriving at a correct opinion. The evolution of late syphilitic formations is always much more rapid than that of cancerous deposits; only rarely, in malignant cases, does epithelioma run a rapid course. The character, moreover, of the ulcerative process due to syphilis is very different from that of epithelial cancer. In tubercular syphilis two, three, or more points of ulceration are apt to exist; in cancer usually only one. In syphilis the secretion is generally abundant, yellowish, and creamy; in cancer it is scanty, streaked with blood, viscid, and stringy. The condition of the tissues surrounding the ulcer is also different. In the infiltrating variety of cancer there is more or less induration; in syphilis there is none, the deposit generally terminating abruptly against the sound skin. In cancer there is apt to be pain of a lancinating character; in syphilis the ulcer is usually without pain.

Inasmuch as many epithelial cancers begin in the form of warts or papillomata, it is often difficult to decide whether the lesion is a simple wart or of a cancerous nature. The history of the case, the mode of advance, the general appearance of the growth, the age of the patient, and the course of the disease must determine

its nature. Observation of the case for a time generally enables the diagnosis to be established. Epithelioma may be known from lupus vulgaris by its usually attacking the middle-aged and the old, while lupus commonly first shows itself in the young, often in childhood. Epithelioma is almost invariably a single formation; the deposits of lupus are generally multiple. Lupus, moreover, is apt to invade several regions of the body at the same time, as, for example, the face and hand. When ulceration takes place in lupus, or when it assumes an hypertrophic form, the diagnosis becomes more difficult, the two diseases in this case often resembling each other; but the peculiar, macular and papular deposits of lupus, aggregated into patches, and having their seat usually around the ulcer, will serve to distinguish it from epithelial cancer. The discharge from a cancerous ulcer is, moreover, different from that of a lupus ulcer; it is pale, scanty, and viscid, while that of lupus is yellowish and puriform. The discharge from epithelioma is usually offensive; that from lupus is not so. It will be remembered, however, as stated in considering lupus, that in rare cases cancer may follow or be combined with lupus.

Treatment.—The diagnosis once established, the sooner treatment is instituted the better. Internal remedies are probably of no avail. The growth is to be removed, with the knife, caustic, actual cautery, or galvano-cautery, with as much of the tissue immediately about it as the case in hand may appear to call for. The operation to be preferred will depend upon the variety of cancer, whether superficial or deep-seated; the extent to which the surrounding tissues are affected; and the locality attacked. The ultimate result, as regards relapses, will be found about the same with either procedure, provided the operations be performed with equal skill. Superficial epitheliomata are, in the majority of cases, best removed with caustic. Among the various remedies, caustic potash, in stick form or in solution, occupies a high position. It causes much less pain than other powerful caustics; which, moreover, does not continue after the cauterization, and by means of acids may be at once relieved. The growth should be thoroughly cauterized, no part of it being permitted to remain undisturbed. This remark applies to all forms of operation, whether with caustic or other means. In all cases it is advisable to carry the caustic into the border of the sound tissues. As the operation is being

performed, the operator must determine the extent of the disease and the amount of tissue to be acted upon. The readiness with which the morbid tissue gives way and is destroyed under the caustic, and the resistance experienced when in contact with normal structures, will enable the surgeon to know when to desist from further cauterization. There is usually no hemorrhage. After the operation the parts are to be bathed with dilute acetic acid, and subsequently dressed with diachylon ointment or olive oil. The dressing may be changed twice daily, and the wound washed with soap and water. In the course of ten days or two weeks the eschar will have detached itself, showing usually a healthy granulating wound, which, in cases favorably disposed, will heal completely, leaving not infrequently an insignificant scar. On the other hand, in cases where the disease is of a malignant type, the wound repairs itself sometimes in apparently the usual healthy manner for the first few weeks, after which the reparative process arrives at a stand, and the ulcer soon breaks down into its former state. This is apt to be the course of the deep-seated variety. Potassa cum calce, in stick or in powder form, made into a paste, is also a valuable preparation. It is at times to be preferred to pure potassa.

Other caustics are used for the same purpose. The chloride of zinc, either in the form of a paste, with flour, or in stick form, enjoys a reputation, especially for the superficial variety. It is effective, but intensely painful, the pain often remaining uncontrollable for several days. I have known it to be so severe and so long continued as to prostrate the patient. It is, moreover, doubtful whether it possesses the advantages over other caustics which have been claimed for it. Arsenic, in the form of a paste, with powdered acacia, equal parts, may be used with much success in many cases of the superficial variety. It is effectual, and can be recommended. A useful powder, employed by Esmarch, consisting of arsenious acid, one part; sulphate of morphia, one part; calomel, eight parts; and powdered acacia, forty-eight parts, may also be mentioned. Pyrogallie acid, in the form of an ointment, one or two drachms to the ounce, as recommended by Kaposi, Jarisch, and others, I have also found especially valuable. I have obtained excellent results from its use where other remedies have failed, and can heartily endorse its value. It should be spread upon muslin and applied for from two to six days con-

stantly. It is to be particularly recommended above other caustic remedies on account of its painlessness. Nitrate of silver may be used for destroying the early formations and deposits which are apt to occur about the margin of superficial ulcers. Whatever remedy be employed, it should be thoroughly applied; the more radical the operation, the less likelihood of a relapse.

On the other hand, there are cases in which it is preferable to use the knife instead of caustic. The extent of the disease, the locality invaded, the previous failure of caustics to arrest the process, and other circumstances, frequently render extirpation with the knife the best mode of procedure. When the disease is of the deep-seated or infiltrating variety, the best hope of a cure is doubtless in the Tagliacozzian operation. The lesion is first completely excised, and is replaced by a flap of sound skin, taken, if possible, from a remote region, as the forearm or hand, with the pedicle attached. Garretson speaks in praise of the operation,* and I have every reason to believe that his success, with a number of such cases, has been remarkable. It is of special value in cases of recurrent disease. The galvano-cautery has also been employed with marked success, and is an effective remedy.† It is particularly adapted to cases where the growth occupies regions which could only with difficulty be treated with caustic or the knife, as about the inner canthus of the eye. Hebra, Kaposi, Auspitz, and others speak well of the scraping spoon, or eurette, in the treatment of superficial formations, used as in lupus vulgaris, already described. Except in superficial cases, its employment should always be supplemented by one of the caustics.

Prognosis.—This is always more or less unfavorable, varying considerably, however, with the case. The age of the patient; the duration of the disease; its course; its locality; and whether single or multiple, must be taken into account. The variety of the disease, whether superficial or deep-seated; the amount of surrounding infiltration; and the presence or absence of glandular involvement, must also be considered. The superficial variety may increase slowly in size for years without giving rise to serious

* System of Oral Surgery, Phila., 1873; also Phila. Med. Times, Sept. 25, 1880.

† See a paper, with cases, by Bryant, Lancet, April 4, 1874.

disease, as, for example, in the case of so-called rodent ulcer; on the other hand, it may extend rapidly until an ulcer of considerable size has formed; or it may pass into the deep-seated variety, when the prognosis becomes at once more grave. The deep-seated variety is always a serious disease. Its course, however, varies greatly. At one time it runs a rapid pace, terminating fatally in one or two years; in other cases it extends through a much longer period. In either variety relapses frequently take place. The patient should be warned concerning the liability of the disease to recur.

SARCOMA.

Sarcoma of the skin consists of shot, pea, hazel-nut or larger sized, variously shaped, discrete, non-pigmented or pigmented tubercles or tumors.* Non-pigmented tumors, occurring as single or multiple growths upon the various regions, represent perhaps the commonest manifestation of the disease. They are smooth, firm, and elastic, are not markedly painful upon pressure, and are reddish, violaceous, or brownish in color. Such tumors are of more frequent occurrence than is generally supposed. Thus, Billroth† refers to fifty-nine cases of sarcoma of the skin, comprising the several varieties of the disease, occurring upon various regions of the body. S. W. Gross‡ also records cases and other interesting information concerning the disease as it is encountered upon the breast. Sarcoma may sometimes resemble keloid, as in a case reported by Satterthwaite.§

The multiple pigmented sarcoma (MELANO-SARCOMA), according to Kaposi, of which he mentions five cases,|| generally first appears on the soles and backs of the feet, and later on the hands, attended by a diffuse thickening of the skin. It may also begin on other regions, as Piffard has pointed out.¶ The lesions often manifest

* For further information on the disease, see Wigglesworth (*Arch. of Derm.*, vol. ii. No. 2), Kaposi (*Diseases of the Skin*, vol. iv.), and Köbner (*Archiv für Derm. und Syph.*, Heft 3, 1869).

† *Chirurgische Klinik*, Wien, 1871-76.

‡ *Treatise on Tumors of the Mammary Gland*. New York, 1880.

§ *New York Med. Rec.*, 1876, p. 610.

|| In a later work (*Path. u. Ther. der Hautkrankheiten*, Wien, 1880) he speaks of having since encountered five additional cases, occurring in men.

¶ *Mat. Med. and Ther. of the Skin*. New York, 1881.

a ready disposition to bleed. They are brownish, bluish, or blackish in color.

Sarcoma may be mistaken for cancer, the papular syphiloderm, gumma, lupus, and lepra. It may occur at any age after puberty, but is commoner towards middle life. It is malignant in character, often proving fatal in the course of a few years. The growth may be either a small or large round-celled or a spindle-celled sarcoma. Kaposi's cases showed the structure to consist of clusters of small round cells in the corium, slight hemorrhages into the corium and papillary layer, and an abundance of pigment. In Wigglesworth's case the disease was found to be seated mainly in the cutis, and to consist of large round cells with single granular nuclei, relatively uniform in size, and considerably larger than white blood-corpuscles. They were embedded in a reticulated, delicately fibrous stroma, the meshes of which enclosed, as a rule, single cells.

The rare disease described by Geber* and myself,† under the name INFLAMMATORY FUNGOID NEOPLASM, may here be referred to. Hebra first encountered the disease in 1872, a short account of it appearing in the annual report for 1873 of the Vienna General Hospital. In 1875 the case was republished by Hans Hebra, while more recently Geber has made it the subject of an article. In 1874 Hebra encountered a second case. A case was also presented by Piffard to the New York Dermatological Society, the notes of which, however, were not recorded.‡

The lesions are of several distinct kinds, the more important consisting of flat or slightly raised patches, and of prominent fungoid tumors. The flat patches vary in size from a small coin to the palm of the hand, are rounded or ovalish, and are either on a level with the surrounding skin or raised. They may be superficial or deep-seated, smooth, scaly, or crusted, and of a pale-pinkish or deep-reddish color. With involution they generally assume a mottled or streaked purplish, yellowish, or salmon color. The tumors are round, rounded, or ovalish, tubercular or fungoid in

* Deutsches Archiv für Klin. Med., Bd. xxi., Heft 2 u. 3, März, 1878. Leipzig. (With a chromo-lithograph.)

† Arch. of Derm., Jan. 1879, and Jan. 1880. (With two portraits.)

‡ Trans. Amer. Derm. Assoc., 1878.

character, varying in size from a pea to an egg, and of a pale-red, deep raspberry-red, or violaceous color. They are soft, firm, or solid, and when fully developed are more or less distinctly furrowed and lobulated and depressed in the centre. They have a smooth and glossy surface, or they are excoriated and ooze a thin, serous, bloody discharge, or a puriform fluid which dries into brownish crusts. They may appear suddenly, within a few hours or a day, or gradually, in the course of weeks or months. Having attained a certain size, they tend to soften, diminish in size, and either undergo spontaneous involution or ulcerate.* The subjective symptoms consist of itching and burning, but are variable. All regions are liable to be invaded, and without symmetry. The course of the disease is variable, but the process tends sooner or later to terminate fatally. The individual lesions generally pursue a capricious course, and in marked cases may usually be observed in all stages of evolution and involution upon the same subject.

Under the microscope the disease is seen to consist of a profuse, closely packed, small round-cell infiltration, completely occupying the corium and the subcutaneous tissues: The cells are small, variable as to size and shape, compact and shining, and finely or coarsely granular. The larger ones show nuclei. They are variously arranged, in the form mainly of dense aggregations, or in strings or columns, the latter following the course of the fibrous connective tissue. Heitzmann† regards the disease as sarcoma, a view which is also held by Kaposi.‡ The case reported by me exhibited in its early history (during the first year) marked inflammatory symptoms, which led me to give provisionally the name inflammatory fungoid neoplasm to the disease, expressive of its chief characters. The name was likewise adopted at about the same time by Geber. Later in its course, however, the microscope showed the process to be rather of a sarcomatous and fibrosarcomatous nature. The disease is to be distinguished from the

* See interesting articles on the spontaneous disappearance of tumors (including the disease under consideration) by Augagneur (*Lyon Médical*, Nos. 24, 25, 26, t. xxxvii., 1881), and Dwight (*Bost. Med. and Surg. Jour.*, Dec. 9, 1880).

† *Arch. of Derm.*, Jan. 1879.

‡ *Path. u. Ther. der Hautkrankheiten*. Wien, 1880.

fungoid forms of lymphadenoma, cancer, and syphilis, and from lupus vulgaris, lepra, and frambœsia. The disease described by Van Harlingen* as a case of "ulcerative scrofuloderm" (which was also under my observation) may, I think, be regarded as probably another variety of the same disease, the latter stages of the process having marked symptoms in common with the case of inflammatory fungoid neoplasm described by me, including its fatal termination.

The so-called "fungoid diseases of the skin," instances of which have been reported from time to time, except when manifestly varieties of cancer or of the other diseases enumerated, are for the most part obscure in their nature. Köbner† collected five rare cases of the kind, which were observed in the Hôpital St. Louis, Paris, and designated them provisionally "multiple, fungoid, papillomatous tumors of the skin." Two of the cases were observed by Hardy, and two by Bazin, the latter reporting one of them in his treatise on diseases of the skin with the name "mycosis fongoïde." The fifth case had been previously recorded by Alibert. Several, if not all, of these cases possess many symptoms in common with the disease under consideration, as described by Geber and myself, and may be regarded as probably of the same nature. Tilbury Fox‡ likewise described a rare form of fungoid disease of the skin with the name "fibroma fungoides," differing from ordinary fibroma in its vascularity, rapid growth, and tendency to ulcerate, which doubtless possessed a similar pathology. There remains still to be referred to the so-called "lymphadénie eutanée," or "myeosis fongoïde," of Gillot§ and Demange,|| the nature of which is not clear, but which presents many features in common with the disease under discussion.

Reference may here be made to a rare case of disease reported

* Arch. of Derm., April, 1879.

† Klinische und experimentelle Mittheilungen aus der Dermatologie und Syphilidologie, p. 37. Erlangen, 1864.

‡ Skin Diseases, 2d Amer. ed. New York, 1873.

§ Étude sur une Affection de la Peau déerite sous le nom de Myeosis fongoïde (Lymphadénie eutanée). Paris, 1869.

|| Du Myeosis fongoïde ou Lymphadénie eutanée. Annales de Derm. et de Syph., No. 2, 1873-74.

by Hardaway,* of St. Louis, consisting of "multiple tumors of the skin accompanied by intense pruritus," the nature of which is not plain. The patient was a middle-aged lady in good general health, whose hands and feet, including the palms and soles, forearms, arms, and legs, were the seat of numerous, symmetrically distributed tubercles and tumors, varying in size from a pea to a hickory-nut, covered with a thick, scaly epidermis and having a resistant horny feel. In places they had coalesced, forming nodular patches, while here and there existed variously sized and shaped thick patches or plates of disease involving the entire thickness of the skin. The lesions were accompanied by intense itching. The disease was of twenty years' duration, and began in the form of blebs, which were soon followed by the tubercles and tumors. Occasionally the tumors ulcerated, but afterwards healed up. The growths when excised recurred, and in the same form as the original lesion. Microscopical examination by Heitzmann showed the disease to be due to a chronic inflammatory process having its seat mainly in the upper layers of the derma.

NÆVUS VASCULOSUS.

Syn., Nævus Vascularis; Nævus Sanguineus; *Germ.*, Gefässmal.

Symptoms.—Vascular nævi are congenital formations, composed chiefly of bloodvessels, which have their seat in the skin and subcutaneous tissues. Their clinical characters vary. They may be prominent, turgescient, erectile, or even pulsating, tumor-like, circumscribed growths, with usually an uneven or rugous surface (ANGIOMA CAVERNOSUM, NÆVUS TUBEROSUS); or they occur as flat, non-elevated, well or imperfectly defined, distinct or faint, smooth patches (NÆVUS FLAMMEUS, NÆVUS SIMPLEX, ANGIOMA SIMPLEX). The latter form is also known as "port wine mark" or "claret stain;" and in German as "feuermal," and in French as "tache de feu." In form nævi are roundish or irregularly shaped. They are bright or dark reddish, violaceous, or bluish in color, varying considerably in shade. They may be either small, pea or bean sized, or much larger, sometimes so extensive as to cover palm or hand sized areas. They are seldom multiple.

* Arch. of Derm., April, 1880.

They are encountered upon all parts of the surface, but are in the majority of cases met with about the head, and especially the face, and in particular the lips. They vary in their course; very often, having attained a certain size early in life, they remain stationary, while at times they retrograde to a variable extent. Sometimes, on the other hand, especially in the case of the larger erectile formations, they increase in size. The more vascular they are, the more likelihood is there of their becoming larger. Ordinarily they remain as permanent deformities. Sometimes, in the case of the simple diffuse, flat growths, they entirely disappear, as a rule, early in life. They are all characterized by becoming paler under pressure, the more prominent growths being markedly compressible.

Pathology.—The causes which give rise to these formations are obscure. In structure they are simple or complex, consisting of dilated and hypertrophied bloodvessels and capillaries, both arteries and veins, which have their seat in the corium and subcutaneous tissues. The vessels are to be considered as an abnormal growth, being present in unusual size, number, and arrangement. The flat or simple angioma (*nævus flammeus*, or port wine mark) consists of a diffuse new growth of bloodvessels, chiefly of capillaries, in the corium, and especially in the upper layers. In the so-called “lobular angioma,” as seen on the face, especially about the lip, the bloodvessels are convoluted, the lobules being separated by more or less connective tissue. In the cavernous form a varying amount of connective tissue likewise exists. Other structures common to the normal skin, as hairs and glands, are also usually present. Sometimes they arise from the subcutaneous tissues, especially from the adipose layer, constituting “angioma lipomatodes.” At times they are somewhat verrucous in character, while occasionally they are pigmented.

Treatment.—The treatment to be recommended for the removal of *nævi*, where this is called for, will depend upon the region involved, and the size, form, and general character of the formation. Various means have been suggested: those which have been attended with most success are the following. Pin-head sized *nævi* may be treated by puncture with a red-hot needle, or a needle charged with nitric acid; or with a needle and from six to twelve cells of the galvanic battery, as in telangiectasis. When the

growth is the size of a split pea and circumscribed, it may be treated by caustic applications. Sodium ethylate, first brought into notice by B. W. Richardson, is an efficient and valuable caustic in the more superficial forms of nævi.* It is made by adding the metal sodium to absolute alcohol, and is best applied by means of a glass rod. Although the pain accompanying the application is not severe, yet it may be lessened by the addition of an alcoholic solution of opium to the sodium ethylate. To insure good result, it is necessary to employ pure ethylate of sodium; if the preparation be made with alcohol containing water, the caustic agent set free is ordinary caustic soda, and not sodium in a nascent state. Neither poultice nor water-dressing should subsequently be applied, the result of contact with hydrous substances being to give a suppurating character to the wound. The crust should always be permitted to loosen itself before removal. Bligh† recommends painting the nævus with liquor plumbi subacetatis, applied once daily. Usually in about four months, in some cases longer, the lesion becomes dotted over with white spots, which gradually coalesce until the nævus has disappeared. Caustic potash, applied in solution, the strength varying according to the amount of surface to be attacked, may also be used with good result. The smaller the growth, the stronger may the solution be made. From one to four drachms to the ounce of water may be used, one or two applications sometimes sufficing. Nitric acid may also be employed, especially in the case of flat nævi, painting the surface sufficiently to cause slight superficial cauterization. If the growth be of any size, a portion only should be attacked at one operation.

Neumann speaks well of an ointment composed of adhesive plaster, one drachm, tartar emetic, nine grains, for small, finger-nail sized, raised or flat, circumscribed nævi, especially of the scalp. Pustulation and free suppuration take place, followed by a flat, thin, soft scar. The application causes but little pain. Success sometimes follows the use of collodion and corrosive sublimate, in the strength of eight grains to the fluidrachm. Injections with the sesquichloride of iron, cantharidine, and other like substances,

* *Lancet*, 1878, vol. ii. p. 654; also 1881, vol. i. p. 168.

† *Brit. Med. Jour.*, Sept. 25, 1880.

as formerly practised, are not to be recommended, being apt to cause extensive sloughing, and, at times, hemorrhage.

Linear scarification has been recommended by Squire for port wine mark.* It is accomplished by scratching or cutting the nævus in numerous minute, superficial, parallel lines oblique to the surface, one-sixteenth of an inch apart, and following these with a series of others at right angles and also slanting, so that all the minute bloodvessels, both vertical and horizontal, may be cut through. The skin is first frozen with ether spray and pressure exercised before thawing and continued ten or fifteen minutes. Squire claims that this process is painless and bloodless, and that it leaves no scar. Malcolm Morris and McCall Anderson, however, assert that after many trials the method has in their hands proved entirely unsuccessful.†

Punctate scarification for the same form of nævus is recommended by Sherwell,‡ by means of an instrument composed of a number of fine needles arranged in a bundle with the points somewhat less than one-sixteenth of an inch apart. They are thrust suddenly, by the action of a spring, to a given depth into the nævus. These needles may be charged with a saturated or a fifty per cent. solution of carbolic acid, or with a twenty-five or forty per cent. solution of chromic acid. Pressure soon causes the slight bleeding and oozing to cease, after which the part is washed off with alcohol and a thick layer of two or three coats of collodion is applied. Like Squire's linear scarification operation, this procedure has not always been successful in other hands than those of its originator.

Vaccination upon nævi is at times followed by very satisfactory results, especially in the case of small formations, and is well spoken of as a means of treatment by numerous observers. Ragaine§ reports seven cases of erectile nævi cured by this means. Paul|| also reports favorable results with the same class of nævi, and advises abundance of vaccine matter, which should be spread over the whole surface. According to Ragaine, the operation may

* Brit. Med. Jour., vol. ii., 1879.

† Arch. of Derm., Oct. 1879

‡ Ibid., 1879, vol. v. p. 354.

§ Jahresbericht der Gesamt. Med., 1874.

|| Abstract in Lond. Med. Rec., Aug. 15, 1881.

be performed about the circumference of the tumors or directly upon their surface. It is important that the points of insertion should be made as far apart as about a half-inch. The best instrument for the purpose is an insect-needle, the hemorrhage following the use of a lancet being apt to wash away the vaccine matter. To prevent such an accident, the needle may be permitted to remain in the puncture for a few moments. The size of the tumor is said never to be a counterindication to the employment of this method.

The treatment by the introduction of the galvanic current constitutes the most generally useful method. Numerous instances of its successful employment are upon record.* The advantages claimed for it over other methods of treatment may be briefly stated as follows: the safety of the operation; the absence of hemorrhage; the cessation of pain after operation; the absence of scar in small nævi; and, finally, the simplicity, rapidity, and effectiveness of the operation. From six to twelve cells are usually sufficient. One or more platinum needles, according to the size of the nævus, are connected with the negative pole, and a single needle, or, when the growth is large, a charecoal point, to the positive pole. After the needle has been in the tumor a short time, decomposition begins, gas pours out by the sides of the needle, a clot is formed, and the tumor turns bluish-white. Sloughing should, and can by proper care, be avoided. Suppuration, even, ought not to occur.

The galvano-cautery is likewise a valuable means of treatment, and is highly recommended by Dawson and Allen,† by means of the needle, knife, or platinum strip. For superficial nævi all that is required is such a degree of heat as will radiate into the deeper tissues from the surface. In treating the subcutaneous formations a white heat is necessary, in order that the knife or needle shall retain sufficient heat to be of service when it has reached the deeper structures. According to Dawson, the galvano-cautery produces a clot which becomes rapidly organized and a shrinking

* See papers by Carter, *Lancet*, Jan. 18, 1873; Penhall, *Lancet*, April 11, 1874; Beard, *Phila. Med. Times*, Sept. 5, 1874; Knott, *Lancet*, March 20, 1875; Duncan, *Edin. Med. Jour.*, Feb. 1876.

† *New York Med. Rec.*, 1876, vol. xi. pp. 11, 12.

in the calibre of the vessels which remains permanent, effected without destruction of tissues. In superficial nævi of moderate size a single thorough application sometimes produces a cure. Where they are large, a portion only should be operated upon at a time.

Where the tumors are prominent or pedunculated, the ligature may often be employed with good result, although a scar is apt to remain in cases where the growth is of any size. Compression may also be tried.

TELANGIECTASIS.

Telangiectases are vascular cutaneous formations which make their appearance during the life of the individual. They are, therefore, acquired growths, in contradistinction to those which are congenital, and which are called nævi. They occur either in the form of more or less circumscribed formations or as tortuous lines, visible to the naked eye as a net-work of enlarged capillaries. The circumscribed growths vary in size from a pin-head to a pea. They are on a level with the surrounding skin or are raised, sometimes to the height of a split pea. In shape they are roundish, ovalish, or irregular. In color they vary from bright to dark or violaceous red. They show themselves singly or in numbers; one, two, or three may not infrequently be observed here and there over the surface. They may develop upon any region, but are most frequently encountered upon the face and thorax. The lines appear in the form of an ill-defined patch or as a collection of distended capillaries, more or less distinct in outline, ramifying over the surface in a tortuous manner. They are met with chiefly upon the face and chest. As a rule, telangiectases do not manifest themselves until adult or middle age. They are unattended by subjective symptoms. Their course is slow, enlarging usually only through a period of years; but they rarely attain any size. They generally remain as permanent growths; occasionally they disappear spontaneously.

ROSACEA.—By this term is designated a variety of telangiectasis, characterized by a diffused, more or less general dilatation of the cutaneous capillaries, usually of the face. The vessels are enlarged, and give the skin a reddish appearance marked with faint

or distinct lines which are generally irregular or tortuous in their course. The condition may be localized, as is ordinarily the case, as, for example, upon the nose, or generalized, occurring over the greater portion of the face. Its common seat is the nose, but it also manifests itself frequently upon the cheeks and chin. The forehead may also be attacked, either alone or in connection with other parts of the face.

Rosacea is very often complicated with acne, giving rise to acne rosacea; but it may occur as the sole disease, without disturbance of the sebaceous glands. It may also appear upon the nose in connection with seborrhœa in chlorotic and anæmic individuals. In simple rosacea the skin is usually smooth; but in aggravated cases it may be uneven, owing to the extreme distention and elevation of the superficial vessels. When seborrhœa is present, the part presents a shining, more or less greasy appearance. Upon pressure the redness disappears for the moment, but quickly returns. The part is often warmer than normal; in seborrhœic cases, however, it may be below the normal temperature. The color may be either bright red or violaceous, depending upon the duration of the disease, the age of the patient, and the cause. In rosacea complicated with acne the nose in men usually becomes enlarged, and the whole cutaneous tissue hypertrophied. (See Acne Rosacea.) The treatment of telangiectasis is that of nævus vasculosus; but I desire to direct attention especially to the value of electrolysis, as recommended by Hardaway,* the method of treatment being the same as that described in connection with the removal of superfluous hairs, to which the reader is referred.

LYMPHANGIOMA.

This very rare disease was first described by Hebra and Kaposi,† with the name LYMPHANGIOMA TUBEROSUM MULTIPLEX. A case is also reported by Pospelow,‡ identical in its chief features with

* Arch. of Derm., Oct. 1879.

† Loc. cit., vol. iii. p. 387. A portrait of the case reported by Kaposi occurs in Hebra's Atlas of Skin Diseases, Lieferung X., Tafel 6. See also Biesiadecki, Untersuchungen aus dem Path.-Anat. Institute in Krakau, p. 11. Wien, 1872.

‡ Viertelj. für Derm. und Syph., Heft 4, 1879.

that of Kaposi. It is characterized by numerous, scattered, pea or bean sized, ovalish or rounded, brownish-red, glistening, somewhat transparent, smooth, flat, slightly elevated tubercles, occurring for the most part about the trunk. They become pale on pressure; are firm and elastic to the touch; and are embedded in the corium, but are not sharply defined. As characteristic of the disease, Pospelow calls especial attention to the transparency of the lesions, and the readiness with which they can be made to sink below the level of the surrounding skin. They are slightly painful on pressure. In appearance the disease resembles the large flat papular syphiloderm. Microscopical examination of excised lesions shows the whole corium to be perforated by variously sized canals, which appear as rounded or ovalish apertures, and which are immensely developed lymphatic vessels and lymph spaces. The growth consists almost entirely of this structure, and has its chief seat in the corium. In both cases reported it manifested itself in childhood, or was congenital. The general health remains good. The course of the disease is extremely slow, it evincing no disposition to malignancy.

Van Harlingen* gives a case illustrating another form of the disease, occurring in a woman thirty years of age, characterized by a large number of tumors of various sizes and shapes distributed over the whole body, together with numerous telangiectases and irregular brownish patches of pigmented skin. The tumors in some instances resembled flabby molluscum fibrosum growths, while in other cases they were smooth lilac or bluish elevations from pin-head to hazel-nut size, and so compressible under the finger as to feel like bladders filled with air. On excision they were found to consist of a pearly, gelatine-like, semi-transparent mass. Microscopic examination showed the structure to be composed of fibrous and granulation-cell tissue, with numerous irregular spaces,—sections of dilated lymphatic vessels.†

* Trans. Amer. Derm. Assoc., 1881.

† In this connection reference may be made to several cases of disease characterized by cutaneous cysts which have been reported from time to time, the nature of which is not clear. See Jamieson (Edin. Med. Jour., Sept. 1873), Tilbury Fox (Trans. Lond. Path. Soc., 1879, "a case of lymphangiectodes"), and Hutchinson (Lancet, 1879, vol. ii. p. 912). In Hutchinson's cases there were groups of wart-like patches, which on close examination were found to

NEUROMA.

With the name neuroma of the skin I would describe a disease characterized by the presence of variously sized and shaped neuromatous growths having their seat primarily in the true skin. The affection is exceedingly rare, there being, to my knowledge, but two cases upon record, the first reported by myself,* the other subsequently by Kosinski.† I shall present an abstract of them.

Case I.—The patient was a man, aged seventy, who had been under my observation for six years.‡ The disease began at the age of sixty, in the form of small, rounded tubercles, upon the shoulder, attended with itching but not pain. For a period of four years they continued to appear in numbers, so that by the end of this time the arm and shoulder were well studded with them. During the subsequent six years they manifested themselves at longer intervals, and their development was slower, although new ones still made their appearance from time to time, the original tubercles scarcely increasing in size.

The disease was characterized by numerous small, split-pea sized, firm, flattened tubercles, occupying the left scapular region, shoulder, and outer surface of the arm as far down as the elbow. Over the shoulder and arm they were closely packed together, the surface presenting a mass of firm, tuberculated tissue. They were immovable, and firmly incorporated with the skin, and extended into the subcutaneous connective tissue. They were irregularly disseminated, and occupied no nerve tract. About the scapular region, and down the arm near the elbow, they were more scattered and discrete, the skin between them being normal. They were pinkish or purplish-pink, the more recent, isolated formations being a pale rose or the color of normal skin. The color of the diseased surface, as a whole, varied according to the position of

be composed of conglomerates of minute cysts with albuminous and corpuscular contents. The term "lymphatic warts" was suggested.

* Case of Painful Neuroma of the Skin. *Amer. Jour. of Med. Sci.*, Oct. 1873, and Oct. 1881.

† Neuroma Multiplex. *Centralblatt für Chirurgie*, No. 16, 1874.

‡ The notes describe the disease as it existed before the operation (in October, 1874).

the limb and the presence or absence of pain. The surface was warmer than the adjacent healthy skin, and during an attack of pain became hot and violaceous in color. Fine, laminated, yellowish, glistening scales were scantily produced and shed from the tubercles, giving the affected part a dry, somewhat scaly aspect.

Paroxysmal pain constituted the distressing feature. This did not manifest itself till three years after the tubercles had begun to form. It was excruciatingly violent, shooting down the arm as far as the knuckles, across the chest, and up the side of the neck and head, the paroxysms usually lasting an hour or longer. The exciting causes were movement of the affected part, exposure to cold air, and mental worry or excitement. Any decided change to bad weather was accompanied by an attack, and there was greater immunity from pain in summer than in winter or during a rainy or snowy season. The nutrition of the arm was not impaired. The general health was good, and no cause could be assigned for the disease. Microscopic examination of excised tubercles revealed the growth to be made up of a firm connective tissue containing non-medullated nerve fibres, running up as high as the papillary layer of the corium, constituting true neuroma amylinicum of the skin.* None of the various methods of treatment employed from time to time having proved of benefit, exsection of a portion (one inch) of the brachial plexus of nerves was performed by Dr. F. F. Maury. The operation was followed by the usual symptoms of atrophy after nerve section, by marked diminution of pain, and by some decrease in the size of the growths. The relief, however, was only temporary.†

Case II.—Kosinski's case was a man, aged thirty. The disease made its appearance in his sixteenth year. The tubercles were at first small and painless, but later grew in size and became painful.

* In the first examination of the growth, I was unable to demonstrate the presence of abnormal nerve structure. More recent examinations, however, show the existence of the above-described formation. The patient has since died. The autopsy, and a study of the disease by Drs. Formad and De Schweinitz, corroborating the diagnosis, may be found in *Amer. Jour. of Med. Sci.*, Oct. 1881.

† For a report of the operation, see *Amer. Jour. of Med. Sci.*, July, 1874.

The affection occupied the posterior and outer sides of the right thigh, as far down as the lower third, and a portion of the buttock. It was characterized by numerous (about one hundred), disseminated, more or less well defined, roundish or ovalish tubercles, varying in size from a pin-head to a hazel-nut. They were seated in the corium, but extended into the deeper structures. They were hard, elastic, and painful to the touch. The larger ones were semi-transparent. The skin was dry, uneven, and covered with a slowly desquamating, scaly epidermis. Pain was a marked feature of the disease, and upon pressure the lesions, more especially the larger ones, were intensely painful. Microscopic examination showed them to be composed of non-medullated nerve fibres and connective tissue. They were found to be supplied by the branches of the small sciatic and external cutaneous nerves. All other treatment having failed, a portion of the small sciatic nerve was exposed by an oblique incision in the gluteal fold, and an inch excised. The operation was followed by immediate diminution of pain. Four months later the lesions had nearly disappeared, and were entirely painless.

Attention has thus been called to two examples of a disease which I believe to be entitled to the name under which they have been placed. It is without doubt closely allied, clinically as well as pathologically, to the affection known as "subcutaneous painful tubercle." It differs, however, from this growth, as originally described by Wood,* in having its seat primarily in the true skin and not in the subcutaneous connective tissue. The subcutaneous painful tubercle, as its name indicates, is situated beneath the skin, and is often scarcely perceptible to the eye. It is always found to be freely movable under the skin and never in any way attached to it. It is, moreover, almost invariably a solitary growth.

MYOMA CUTIS.—Dermatomyoma, consisting of tumors of the skin composed of smooth muscular fibres, also known as LIOMYOMA CUTIS (from *λεῖος*, smooth), has been described by Virchow,† Ver-

* Edin. Med. and Surg. Jour., 1812; and Trans. of Med.-Chir. Soc. of Edin., 1829.

† Ueber cavernöse Geschwülste und Telangiectasien. Archiv für Path., Anat. u. Phys., 1854, Bd. vi. pp. 553, 554.

neuil,* Forster,† and more recently by Besnier,‡ of Paris, who has published a valuable article on the subject. The disease may occur in the form of single or multiple growths localized in a special region, as the scrotum or the nipple, as in the cases reported by Forster, Virehow, and Challand;§ or, more rarely, as multiple disseminated formations, occupying the trunk and extremities, as in the cases recorded by Verneuil and Besnier.

The true myoma of the skin, or the simple variety of the disease, may be illustrated by the following case, reported by Besnier. The patient was a woman, sixty years of age. Upon the trunk and upper extremities there existed disseminated lesions, consisting of pale-rose colored, rounded or ovalish, very slightly raised, bean sized macules; together with rose and dull-red colored shot, pea, and bean sized, firm tumors, with a smooth surface. There was no itching or pain, except in the case of the larger tumors, which were painful on pressure. The disease was of three months' duration. Microscopic examination showed the growths to consist almost entirely of bundles of smooth muscular fibres, of variable thickness, forming a close net-work. In a case reported by Solles,|| severe pain, spontaneous and provoked by irritation, existed. Pressure, blows, and sometimes the mere friction of the clothing upon the tumors caused attacks of pain, which, confined at first to the part irritated, extended in all directions. With the pain, the tumors, which were the seat of pain, became anæmic for the time being. Microscopical examination gave the same results as in Besnier's case. The patient also suffered from spontaneous neuralgic attacks.

Another and commoner variety of the disease consists of tumors, usually solitary, but sometimes multiple upon a localized region. They are encountered upon the mammae, scrotum, penis, and labia, as sessile or pedunculated growths, varying in size from a small nut to an orange, but are usually the size of an almond or a walnut. They are contractile, more or less vascular, of slow

* Bull. de la Soc. Anat., 2me Sér., XXXIII^e Année, Août, 1858, p. 373.

† Ueber die weichen Warzen und molluskenartigen Geschwülste der Haut. Wiener Med. Wochenschr., No. 9, 1858.

‡ Annales de Derm. et de Syph., 2me Sér., t. i. No. 1, 1880.

§ Bull. de la Soc. Anat., 5e Sér., XLVI^e Année, Juillet, 1871.

|| Annales de Derm. et de Syph., 2me Sér., t. ii. No. 1, p. 60.

growth, and usually painless. There are exceptions to this latter statement, as in a case reported by Virchow,* where the pain was of extraordinary intensity. Myoma cutis consists essentially of a new formation of involuntary, or smooth, muscular fibres. It may, however, vary greatly in its composition. At times it is made up largely of connective tissue, constituting FIBROMYOMA; in other cases bloodvessels prevail to such an extent as to give rise to cavernous, erectile tumors, designated by Virchow MYOMA TELANGIECTODES. The disease is benign in character, and is rare. It is liable to be confounded with various benignant cutaneous tumors, especially with molluseum fibrosum.

* Loc. cit.

CLASS VIII.

NEUROSES.

UNDER the head of neuroses are classed those disorders which are characterized by an alteration in the normal sensibility of the skin unattended by structural change. They are strictly functional in character, and depend upon an altered state of the nervous system, manifesting itself directly upon the cutaneous surface. The symptoms of neuroses, consequently, are purely subjective, no structural lesions or other objective symptoms primarily existing. Secondary lesions, however, as scratch marks or artificial hyperæmia, may be produced, and must be viewed as consequent upon the original disturbance. The affections which are found in this class may be grouped into two divisions, termed hyperæsthesia and anæsthesia.

HYPERÆSTHESIA.

Cutaneous hyperæsthesia consists in an abnormal state of the skin characterized by an augmentation in its general sensibility. It may be idiopathic or symptomatic; the latter variety is that usually encountered, the condition being secondary and manifestly dependent upon some more serious disease. Simple augmented natural sensibility, or simple hyperæsthesia, may be either general or local, diffused or circumscribed, and unilateral or symmetrical. The temperature, as a rule, remains normal. The causes are varied, the condition being due either to some functional derangement of the nervous system, or to some organic disease connected with the nerve centres or trunks. Hysteria and allied states are well-known causes; also diseases of the brain, spinal cord, and nerves. The sensation in the parts is unduly exalted, the patient experiencing discomfort from contact with the air, clothes, and other objects. The skin is often exquisitely sensitive to all impres-

sions. In duration it may be permanent or temporary, according to the cause which has occasioned it.

DERMATALGIA.

Syn., Dermalgia; Neuralgia of the Skin; Rheumatism of the Skin; *Germ.*, Nervenschmerz der Haut; *Fr.*, Dermalgie.

DERMATALGIA IS CHARACTERIZED BY PAIN HAVING ITS SEAT SOLELY IN THE SKIN, ASSOCIATED USUALLY WITH A MORBIDLY SENSITIVE CONDITION OF THE PART, UNATTENDED BY STRUCTURAL CHANGE.

Symptoms.—The subject of dermalgia has received especial attention from Piorry,* Beau,† and Axenfeld.‡ The symptoms are entirely subjective. There is absolutely nothing abnormal to be seen upon the skin. It presents no sign of eruption, nor is there any alteration in its thickness, coloration, or temperature. The disease may be general or local; ordinarily it is confined to a small area. All parts of the body may be invaded; but it has preference for the parts supplied with hair. It is generally encountered in adult age, and is more frequently observed in women than in men. It is described by patients as consisting of an extremely sensitive state of the skin, accompanied by a feeling of positive pain, which is peculiar in that it has its seat in the most superficial layers of the integument. The attack is often sudden. The surface becomes remarkably sensible to all external impressions, the touch, and even the influence of the air, exciting pain. In addition, the part is the seat of a spontaneous pain, which may be either constant or intermittent in character. It may be slight or severe in degree, and in the several cases that I have encountered has been compared to sensations of burning, pricking, shooting, or boring. Sometimes it is said to resemble a series of electric shocks. It has also been described as though the part had been denuded of epidermis and the papillæ allowed to remain exposed to the air. Contact, as well as motion, always increases the pain, the rubbing of the clothes, or the mere touch of the finger,

* Mémoire sur la Nature et le Traitement de plusieurs Névroses. Paris, 1835.

† Arch. Gén. de Méd., t. xii. Paris, 1841.

‡ Des Névroses. Paris, 1864.

being sufficient to produce it. Gentle manipulation of the part in some cases causes a greater degree of pain than pressure. Firm and forcible pressure will sometimes relieve it. It is usually worse at night, and may be so severe as to prevent sleep. The course of the disease is indefinite. Relapses may occur.

Two forms of dermatalgia are encountered, which may be designated respectively idiopathic and symptomatic. In the former the cutaneous symptoms exist apparently as the primary and sole disease, while in the latter, diseases of other organs primarily occur, as, for example, lesions of the nervous centres (for example, locomotor ataxia), upon which the skin affection is manifestly dependent. The idiopathic form is very rare; the symptomatic is more common.

Etiology.—The causes which occasion the idiopathic form are generally obscure. Its connection with rheumatism in some cases has been pointed out by Beau. This writer, indeed, considers that the majority of cases are of a rheumatic nature. In most of the recorded examples of the affection there certainly has been a history of rheumatism, either recent or remote; but it occurs also in those apparently in the best of health, as I have observed in several instances. It is not confined to those of nervous temperament. It sometimes follows a general impression of cold. The symptomatic form may be caused by a number of diseases, especially organic diseases of the brain and spinal cord. Hysteria is also one of the more common causes, and it is likewise known to accompany chlorosis.*

Pathology.—From the character of the pain in idiopathic dermatalgia there can be no doubt that the disease has its seat in the upper layers of the true skin. It is remarkably superficial, and does not, as a rule, appear to extend even as far down as the subcutaneous tissues. As Axenfeld remarks, in addition to the location of the pain by the patient, its exasperation caused by the slightest touch proves conclusively that it is actually situated in the skin, and not simply referred there by the nervous centres.

Diagnosis.—It may be confounded with simple hyperæsthesia, but this condition usually extends over considerable surface and

* See Mordret, *Prager Viertelj.*, vol. lxxiii. p. 87; also Briquet, *Traité clinique et thérapeutique de l'Hystérie*, Paris, 1859.

is unaccompanied by pain. It will be distinguished from pruritus by the usually limited area of surface attacked, and by the presence of pain instead of itching. It should not be confused with pains in the nerve trunks, with ordinary neuralgias, situated in the deeper structures, or with muscular pains.

Treatment.—This will depend upon whether it be idiopathic or symptomatic in form, and more particularly upon the cause. Rheumatism should always be suspected, and in obstinate cases diseases of the nerve centres should be looked for. In the idiopathic form the disease may disappear at the end of a few weeks either with or without treatment. Local applications, however, may be demanded to relieve the acute symptoms. A blister to the part, as recommended by Beau, may be tried. The galvanic current, and applications containing the tincture of belladonna, of aconite root, or of iodine, may also be referred to as likely to prove serviceable. Vapor baths may be employed where the disorder is general.

PRURITUS.

PRURITUS IS A FUNCTIONAL CUTANEOUS AFFECTION, MANIFESTING ITSELF SOLELY BY THE PRESENCE OF THE SENSATION OF ITCHING, WITHOUT STRUCTURAL ALTERATION OF THE SKIN.

Symptoms.—It may be stated, in the first place, that the various forms of itching encountered in the course of many diseases of the skin accompanied by organic change, are in no way associated with the disorder under consideration. These have been mentioned and discussed in connection with the diseases in which they occur. Pruritus stands forth a prominent and distinct affection. As stated, the single primary symptom is itching, there being no primary objective symptoms whatsoever; secondary lesions may or may not exist, their presence depending upon the amount of irritation and scratching to which the skin has been subjected.

The sensation is variously described, as it is dependent upon one cause or another, and according to the region involved. Sometimes it is spoken of as a simple irritation of the skin, as though some irritating substance were in contact with the body, as, for instance, new flannel. In other cases it is that of formication, as though minute insects were crawling over the surface. Again it is a tingling sensation, accompanied by a desire to scratch. In this

manner, according to the subjective condition of the individual, it may be likened to an endless variety of sensations. It exists in all degrees of severity, from a slight annoyance to a miserable disease. It may occur at any age, but is most frequently met with in middle life, and in old age, when it is designated PRURITUS SENILIS.

One characteristic of the itching, in all cases, is that it produces an irresistible desire to scratch. This act, or a modification, rubbing, is invariably indulged in to a greater or less extent, and can rarely be refrained from in spite of the strongest will. As a result, the surface is generally seen to be slightly roughened, hyperæmic, and excoriated in a slight or marked degree, the tracks of the nails being visible in the form of streaks or superficial wounds. In other cases, notwithstanding the scratching, but few excoriations or marks are to be observed, so that were it not for the statement of the patient we might be inclined to doubt the presence of any disorder. The itching may be intermittent or constant. In the majority of cases it is the former, manifesting itself paroxysmally. It is always worse at night.

Pruritus may be general, when it is designated PRURITUS UNIVERSALIS, or local, when it is termed PRURITUS LOCALIS. It rarely, however, invades the whole surface at the same time, although the various regions of the body may in turn be attacked. In most cases certain localities are chosen, where it remains until it disappears either spontaneously or through treatment. About the head it may attack the scalp or the face; when upon the face, the nose and mouth are particularly liable to be involved. The trunk is also often the seat of the disease, especially in elderly persons. The regions commonly attacked, however, are the genitalia and anus.

Occurring about the female genital organs, constituting the PRURITUS VULVÆ of writers, it is important not to confound it with other diseases of an itching character which are apt to appear in this locality. The itching may be seated in the labia, vagina, or clitoris, and is a very distressing affection. It may occur at any period of life, but it is more frequently encountered during middle and old age. In children it is often caused by worms in the bowel.

In the male, the scrotum is the part generally attacked (PRU-

PRURITUS SCROTI). It may involve this region alone or may extend along the perineum to the anus. The orifice of the urethra may also be the seat of the disease. The sensations are usually intensely annoying, causing the patient to rub and scratch violently. It is worse at night, and, being aggravated by warmth, is apt to come on after retiring.

The anus is also a frequent seat of the disorder (PRURITUS ANI). It occurs here in both sexes, and in children as well as in adults. The itching may be around the orifice or just within the rectum. In middle-aged or elderly persons it is not infrequently associated with hemorrhoids. It is even more intolerable than any of the other local varieties. At times it is constant, but more often it comes and goes from time to time, but is particularly annoying at night.

Etiology.—The causes are extremely varied, and it is necessary to bear this in mind when investigating a case. It may be occasioned by physiological changes, as, for instance, those which take place in connection with the uterus during gestation, or by dysmenorrhœa, or by irregularity of the menstrual function in young women. Organic diseases of the uterus and ovaries are also at times accompanied by it. It is also met with at the climacteric period. Occasionally it is associated with hysteria. Leucorrhœa and vulvitis are likewise common causes. It is, moreover, encountered in the course of certain other diseases, kidney diseases and hepatic disorders, especially the latter, being not infrequently productive of it. It is met with in albuminuria, Bright's disease, and diabetes. In obstinate cases sugar may be suspected, diabetes mellitus being a not infrequent cause. The urine should always be examined. Pruritus accompanying jaundice is common. Friedrichs estimated that it occurs in about one-fifth of the cases, while Wickham Legg* states that he meets with it in sixty-eight per cent. of the cases of jaundice. It is usually general, and is worse at night. Sometimes it precedes the jaundice. In rare cases it may manifest itself weeks or even several months before the jaundice, as in instances reported by Graves,† Flint,‡ and Legg.§ As a rule,

* On the Bile, Jaundice, and Bilious Diseases. New York, 1880.

† Clin. Lect. on the Pract. of Med, 2d. ed., p. 637. Dublin, 1864.

‡ Phila. Med. Times, 1878, vol. viii. p. 507.

§ Loc. cit.

according to Legg, it is most intense at the onset, ceasing when the jaundice has lasted a few days. It is, however, often very obstinate, and may prove a distressing symptom. It may occur also in hepatic disorder without jaundice. Its cause is not definitely known. According to Murchison, it is probably not caused by the circulation of bile-pigment.

Various diseases of the nervous system are likewise found to be the origin of pruritus. Very often it is caused by gastro-intestinal derangement, especially constipation. Genito-urinary diseases, as vesical calculi and vegetations or polypi of the urethra, in both sexes are also well-recognized causes; also hemorrhoids and intestinal worms, especially ascarides. In the latter cases the pruritus is apt to locate itself immediately about the seat of the disease. The ingestion of certain medicines may likewise be followed by pruritus, opium occasionally acting in this manner. It is, of course, distinctly understood that the affection under discussion is in no way caused by parasites, either animal or vegetable. Pediculi may be present in pruritus, but if so the fact is to be regarded as entirely accidental.

Pathology.—Pruritus is a functional affection. It is a disease purely of sensation. It must be viewed as being usually due to reflex nervous action. The nerve disturbance, unaccompanied by structural change, constitutes the whole process. The tissues remain unaltered throughout the entire course of the disorder. The causes which give rise to it are often similar to those which occasion certain organic cutaneous diseases, as, for instance, urticaria; but the effect upon the skin is altogether different. In rare cases pruritus gives rise to peculiar hallucinations and subjective symptoms, as in a case reported by me where the patient believed the skin to be infested by worms.*

Diagnosis.—No difficulty can arise in distinguishing the affection. It is a disease of the skin without any primary sign of alteration in its structure. Nothing abnormal is to be seen, except secondary lesions. The diagnosis depends entirely upon the subjective symptoms stated by the patient. Pruritus begins and runs its course as such. Occasionally, owing to violent scratching and the use of strong applications, more or less dermatitis may be

* Phila. Med. Times, Nov. 27, 1875.

brought on. Thus, scratch marks, torn follicles, blood crusts, roughened epidermis, hyperæmia, congested follicles resembling papules, and other symptoms of a similar kind, may be present; but they are all secondary lesions. The complication, however, in my experience, is not often encountered.

Prurigo, a name which until recently served for several distinct diseases, is now acknowledged to represent a definite process.* It is a papular affection, with marked symptoms and a determinate course. Bearing in mind its papular nature, therefore, it should never be confounded with pruritus. Pruritus and prurigo must be clearly separated, the only symptom they have in common being one found accompanying many cutaneous diseases, namely, itching.

Pruritus may also be confounded with the several varieties of pediculosis, especially corporis and pubis. The secondary symptoms of these diseases are similar, and it is concerning these lesions that the error is apt to arise. In both complaints there are itching and scratch marks; but the latter are much more marked in pediculosis, and the presence of the pediculi establishes conclusively the diagnosis. The scratch marks and excoriations of pruritus are rarely extensive; in pediculosis they are not only conspicuous but are also characteristic as regards their distribution and form. Thorough inspection of the body, and especially of the underclothes, is necessary in making the examination; the parasites should be suspected in every case of so-called "pruritus." In obscure cases of pruritus of the pudenda in the female, a careful examination should be made of the labia and vagina, with the view of excluding the presence of unsuspected growths or tumors of one kind or another, which are capable of giving rise to the disease. Inversion of the hairs of the labia should also be excluded.

Treatment.—This must vary according to the cause. Each case should receive careful investigation, for a successful result will depend upon the recognition of the cause. Constitutional and local treatment are both demanded. The internal remedies to be employed are those which seem indicated for relieving the cause,

* Confusion has long existed between pruritus, prurigo, and pediculosis; but, as may be seen by reference to the descriptions of these diseases, they are very different disorders as regards both their symptoms and their causes.

of whatever nature this may prove. The bowels are to be regulated, and, if habitual constipation exist, they are to be kept open, saline preparations being preferable. If there be flatulence or dyspepsia, the diet should be prescribed with a view to avoiding all irritating and indigestible articles of food. Wine, coffee, and tea should, as a rule, be interdicted. Proper exercise is also to be directed. Close attention to details of this kind will occasionally be followed by most gratifying results. Irregular menstruation is to be improved by attention to the general health, by the judicious use of iron or other remedies, cod-liver oil, aperients, and out-door recreation. Quinine, strychnine, and belladonna may be mentioned as being sometimes useful. When accompanying diseases of the kidney or liver, the treatment is to be directed against these organs, nor is much improvement to be hoped for until the primary disease has been relieved. Murchison* speaks highly of the value of bicarbonate of potassium when the itching is due to jaundice. These remarks apply equally to affections of the nervous system and of the genito-urinary tract. In these cases the pruritus is purely symptomatic. Where the internal difficulty is of an organic kind, it is not likely that the cutaneous complaint will be relieved until the cause has been at least modified. Carbolic acid is also a remedy of some value, administered as described in considering psoriasis. Bulkley† speaks favorably of the tincture of gelseminum, in fifteen drop doses every half hour until from one to two drachms have been taken. Pilocarpin is also recommended by Pick,‡ given by the mouth or hypodermically, in doses from an eighth to a quarter of a grain twice daily.

External treatment in the majority of cases is scarcely to be looked upon as curative, but affords great relief, and in all cases is demanded. Water in the form of cold or hot douches, or alternately cold and hot, as hot as the skin will bear, plain vapor baths, and medicated baths, will often prove of service in allaying the symptoms. The alkaline bath, composed of from three to six ounces of the bicarbonate of sodium, or of from two to four ounces of the carbonate of potassium or of borax, to thirty gallons of water; and sulphuret of potassium, from one to four ounces to

* Loc. cit.

† New York Med. Jour., Jan. 1881.

‡ Abstract in Phila. Med. Times, vol. x. p. 452.

the bath, and sulphur vapor baths, may all be mentioned as being useful. Benefit may often be derived from the use after the bath of one of the bland oils, as oil of sweet almond or olive oil, or from simple ointments, as equal parts of one of the petroleum ointments and lard or glycerine; also glycerole of starch or of tannin.

Lotions are to be commended as especially serviceable in the treatment of the local varieties of the disease. The most valuable remedy is carbolic acid, employed in the strength of from five to twenty minims to the ounce, to which may be added half a drachm or more each of glycerine and alcohol. The disagreeable odor is best disguised with water of bitter almond or with oil of lemon. It may also be used with potassa; as in the following prescription :

℞ Acidi Carbolici, ℥i;
Potassæ, ℥ss;
Aquæ, f℥viii.
M.

Thymol, prescribed as in eczema, has also proved useful in my hands. The corrosive chloride of mercury in the form of a lotion, half a grain to two or three grains to the ounce of water or diluted alcohol, may frequently be resorted to with benefit. Black wash, and lime-water, may likewise be used. Folsom speaks of having obtained good results from the essence of peppermint where other well-known remedies failed; and Taylor also refers to its employment with an equal part of glycerine, painted on the part with a brush. Morphia, from one to three grains to the ounce; acetate of lead, fifteen or twenty grains to the ounce; cyanide of potassium, from fifteen to thirty grains to the pint; sulphite of sodium, a drachm to the ounce; dilute hydrocyanic acid, from one to four drachms to the pint; chloroform; chloroform and alcohol, a drachm to the ounce; lead-water; diluted water of ammonia; dilute nitric acid; and acetic acid; are all serviceable remedies. Camphor, chloral, and borax are likewise three useful substances, employed with water or alcohol, or in various other combinations. The following formula may be given :

℞ Boracis, ℥ii;
Glycerinæ, f℥i;
Spts. Camphoræ, f℥ss;
Aquæ Rosæ, f℥viss.
M.

A chloral lotion, varying in strength from ten to thirty grains to the ounce, may often be employed with good result. Borax and morphia are advantageously combined, as, for example, in the following, useful in pruritus vulvæ. The parts should first be washed with soap and water and gently dried.

R Boracis, ℥iv ;
 Morphiæ Sulphatis, gr. viii ;
 Glycerinæ, f℥ss ;
 Aquæ, f℥viiss.
 M.

Tobacco, in the form of infusion or decoction, and infusions or decoctions of white hellebore, belladonna, and aconite, are all useful. R. W. Taylor* recommends the following :

R Fol. Belladonnæ,
 Fol. Hyoseyami, āā ℥ii ;
 Fol. Aconiti, ℥ss ;
 Acidi Acetici, f℥i.
 M.

It should be diluted with water, a drachm to the ounce. It may also be used with glycerine, equal parts, painted on the parts; or as an ointment, a drachm or two to the ounce. The fluid extract of conium, applied by means of a brush, is also recommended by Dr. Satterlee. Tar combined with an alkali, as in the "liquor picis alkalinus," is sometimes found to be valuable; one, two, or more drachms to the pint may be used. (For formula, see p. 204.) An alcoholic solution of coal tar, in the form of the "liquor carbonis detergens" (see p. 199), may also be mentioned.

In some instances ointments relieve more effectually than lotions, especially in the localized forms of the disease. They are prepared in various combinations, chiefly from the substances which have been mentioned. Carbolic acid, ten or twenty minims to the ounce of vaseline; calomel, half a drachm or a drachm to the ounce; cyanide of potassium, five to fifteen grains to the ounce; chloroform, a drachm to the ounce; are all especially useful in

* On the various forms of pruritus cutaneus and their treatment. Arch. of Clin. Surg., Aug. 1877.

pruritus of the genitalia and anus. The following formula, valuable in pruritus vulvæ, may be given :

R Ungt. Cetacci, ʒi;
Hydrargyri Chloridi Mitis, ʒss;
Ext. Belladonnæ, ʒi.
M.

A preparation, introduced to the profession by Bulkley, composed of camphor and chloral, according to the following formula, will often be found of service :

R Camphoræ,
Chloralis Hydratis, āā ʒi;
Ungt. Aquæ Rosæ, ʒi.
M.

The camphor and chloral are to be rubbed together until fluid, and then added to the ointment. The mixture may also be used with vaseline or cosmoline, or as a lotion with glycerine and water.

In pruritus of the female genital organs it is generally advisable to use fluid preparations, in the form of vaginal injections, or applied by means of a tampon or cloth. Sometimes hot water, as hot as can be tolerated, will be found effective. Atthill and Goodell both regard the decoction of tobacco, in the strength of two drachms of the leaf to the pint, as one of the most valuable remedies in these cases. Bazin recommends the following :

R Liq. Calcis,
Glycerinæ, āā fʒi;
Ol. Amygdalæ Dulcis, fʒii;
Ol. Rosmarini, gtt. v.
M.

Gill speaks well of the nitrate of alumina, five or ten grains to the ounce of water. Sulphurous acid is also valuable; likewise a solution of chlorate of potassium. Alum, fifteen or thirty grains to the pint of decoction of barley, will sometimes be found useful. A prescription containing sulphite of sodium, one drachm; water, four drachms; and glycerine, one ounce, pencilled upon the parts, may also be referred to. Balsam of Peru, either alone or with

iodoform, as an ointment, is a remedy which will also prove of decided value in some cases; while in other cases an ethereal solution of iodoform in the form of a spray may afford relief.

In the treatment of pruritus ointments will generally be found of most value. The various bland oils, especially cod-liver oil, are also sometimes serviceable. Bulkley recommends equal parts of mercurial ointment and belladonna ointment, applied upon a pledget of lint. Where there are fissures, pencilling with a solution of the nitrate of silver will often prove beneficial. The application of very hot water, as hot as can be borne, applied with a soft linen compress, will itself sometimes afford ease, and may be used before other remedies are employed. In pruritus scroti Bulkley obtains good results from the following prescription:

R Bismuthi Subnitratis, ℥ii;
Acidi Hydrocyanici, f℥ii;
Mist. Amygdalæ, f℥iv.
M.

Legg thinks he has derived more benefit in pruritus due to jaundice from the use of the mercurial ointments, especially calomel and white preeipitate, than from any other remedies. Murchison in these cases valued lotions of chloroform (one drachm to five of glycerine) and cyanide of potassium (one drachm to the pint); and acetic acid baths or lotions, in the strength of half a pint of the acid to three gallons of water.

Prognosis.—This should always be guarded. The disorder, as a rule, is obstinate, and often extremely so. The prognosis must depend entirely upon the nature of the cause, and the ability to remove it. The patient should be encouraged to persevere with the treatment. In grave cases, melancholic symptoms and mental depression may be present. The affection is a most distressing one, and calls for every effort on the part of the physician.

PRURITUS HIEMALIS.—With this name I described for the first time* a peculiar disorder of the skin, characterized by an irritable, somewhat harsh state of the skin, accompanied by itching, smarting, tingling, and burning, unattended primarily by appar-

* Phila. Med. Times, Jan. 10, 1874.

ent structural change, dependent upon atmospheric influences, and occurring chiefly in cold weather. It makes its appearance in the autumn, usually in October, and, becoming worse with the colder weather, continues, as a rule, until spring. It may appear gradually or suddenly. The amount of irritation varies; it may be slight or so severe as to cause much annoyance. It possesses the peculiarity of becoming aggravated towards night, usually as the patient is about to retire, and is at its height, as a rule, shortly after the bed has been entered. The desire to scratch is irresistible, and the individual gratifies the craving either until some relief is obtained or sleep terminates the distress. Upon awaking in the morning, itching may again manifest itself, but generally it is insignificant, and often no further thought is given the subject until the following evening, when the symptoms reappear. Sometimes, in mild cases, no itching whatsoever is experienced through the day. Should a period of mild or warm weather occur, the symptoms at once improve or for the time may even disappear. At the end of an indefinite period, usually months, it gradually vanishes. The patient now remains free until the next autumn, when in all probability it will recur and run a similar course. It may relapse in this way year after year, or it may disappear at the end of the first attack, not to return. In mild winters it assumes a correspondingly light type.

There is no primary eruption connected with the disorder, either at the beginning or at any time during its course. If the skin be examined, nothing indicative of disease is to be detected. It looks healthy, with the exception that it is perhaps somewhat dry, but the glandular secretions do not seem to be markedly deficient. The epidermis is normal, there is no desquamation, and the parts are neither hyperæmic nor warm. The hair-follicles are neither inflamed nor prominent, there being no accumulation about their openings. In short, the subjective symptoms which the patient communicates alone convey any idea of the disorder. If, however, the skin be seen after the complaint has existed for some time, it will look otherwise than described. Marked secondary symptoms now exist. The skin may be rough and harsh or slightly chapped, sore, and reddish, and many of the follicles more or less inflamed, giving rise to minute papules. The hairs may also be torn and broken off close to their follicles. Here and

there, generally over a considerable surface, the skin looks irritated and inflamed, the result of scratching. The marks of the fingernails are also usually everywhere present, in the form of streaks and variously sized excoriations and blood crusts. In severe cases a general dermatitis of the thighs and legs may be present, the follicles being notably involved, and the subjective symptoms are marked.

All parts of the body may be attacked, although it is found much more frequently upon certain regions. It is confined chiefly to the lower extremities, its usual seat being upon the inner surfaces of the thighs, about the knees, in the popliteal spaces, upon the calves of the legs, and around the ankles. Thus, the non-hairy portions of the limbs are selected in preference to the hairy parts. It is not a localized affection. The symptoms may be most marked here or there, as the case may be, or may change from one locality to another. Its duration is variable. In some cases it lasts but a few weeks, while in other instances it remains until the advent of warm weather. Not infrequently it abates in severity after the first few weeks. A change of weather from cold to warm will also greatly relieve the disorder. It is a common complaint in cold and temperate climates, and is found upon individuals of all ages, no particular period of life being more susceptible than another. It occurs in both sexes.

Concerning the etiology of the affection, it is known to be intimately associated with atmospheric influences. It is emphatically a disorder of the cool weather, disappearing as soon as the warmer season establishes itself. I have seen a few cases, however, where it persisted well into hot weather. It is most common in northern climates, decreasing in frequency and in degree as the south is approached. The general health is in no way at fault. It occurs frequently in persons in excellent health. While derangement of the alimentary canal or other functional disturbance may exist, such conditions cannot be viewed as causing the disease. It is found equally among those who live in luxury and those dwelling in poverty. It is not caused, or in any way influenced, by inattention to cleanliness, for it exists in no greater proportion among the unwashed than among the cleanly, it being as frequent among bathers as among those who never use the bath. Nor is it due to any peculiarity in the underclothes worn, neither flannel, woollen

wear, nor rough goods of any description being the direct cause, although when used they of course aggravate the condition. External irritation, therefore, has no share in the primary cause. In its secondary stage, after long-continued scratching, it is liable to be confounded with other diseases; thus, it may be mistaken for keratosis pilaris, prurigo, and pediculosis.

While certain external remedies relieve the condition for a time, they cannot be relied upon to effect a cure. The treatment, upon the whole, is not satisfactory. The most relief is to be obtained from the use of glycerine, vaseline, or eosmoline, the various emollient ointments, carbolic acid, and the tarry preparations, in the form of lotions or ointments. Glycerine is the most valuable remedy, in the form of a lotion or as an ointment. Alkaline baths, from two to six ounces of bicarbonate of sodium to the bath, and the systematic use of the vapor bath, will at times give relief. The parts should be gently dried with a soft towel. The undergarments worn should be of an unirritating nature. The various other prescriptions, lotions, and ointments referred to in the treatment of the other forms of the disease may also be used. Internal treatment is of no avail, except perhaps where manifest functional derangement of internal organs exists.

ANÆSTHESIA.

Cutaneous anæsthesia is characterized either by diminished sensibility or by an absolute want of sensibility. It varies greatly in the degree of its development. It may be general or local; diffused or circumscribed. In the majority of cases it is confined to certain regions. It may be unilateral or symmetrical. It manifests itself by the absence rather than by the presence of symptoms. The integument so affected is numb, or may be completely without feeling. It may or may not be accompanied by diminution of temperature, arrest of nutrition, and other signs of nerve disturbance, symptoms of this character being present or absent according to the cause. As a modification of anæsthesia there exists the condition known as "analgesia" or "anodynia," in which there is loss of sensibility to pain. It may be partial or complete; when complete, there is absolute immunity from pain, to such a degree that a pin may be thrust through the tissues

without giving rise to suffering. It may exist alone, without anæsthesia, tactile sensibility being preserved; or it may occur together with anæsthesia, in which case loss of sensibility both to touch and to pain is present. It is encountered in syphilis and in other diseases.

Cutaneous anæsthesia may be idiopathic or symptomatic. Its causes are numerous and diverse in nature; they may be divided into those having a central origin, and those which act from without. To the latter belong all those agents which are capable of producing local anæsthesia, as cold, freezing mixtures, carbolic acid, chloroform, ether, caustics, aconite, and other substances possessing like properties. Anæsthesia may also result from traumatism, wounds, and injuries to nerves, not infrequently being followed by more or less complete loss of sensibility. Certain diseases in which the nerves become involved by the morbid process are also accompanied by anæsthesia, as in leprosy and syphilis; likewise tumors of one kind or another, pressing upon nerve trunks. Diseases of the nervous system, both functional and organic, as, for example, hysteria and diseases of the brain and spinal cord, are also not infrequent causes of anæsthesia. Finally, loss of sensibility may arise from the toxic effects upon the system of certain substances; of these, chloroform, ether, opium, and lead may be mentioned.

In certain cases of anæsthesia, to which the name "anæsthesia dolorosa" has been applied by Romberg, the patient suffers from intense pain, although there may be complete loss of all forms of sensibility. It may be burning, shooting, darting, or boring in character. The affection is met with especially about the region of the trigeminal nerve, and is probably always symptomatic of organic disease of the nerve centres.

CLASS IX.

PARASITÆ—PARASITES.

THIS class stands upon an etiological basis. The diseases constitute a natural, intelligible, and satisfactory group. The so-called parasites of the skin belong to the vegetable and animal kingdoms, and are termed respectively vegetable and animal parasites. They derive their sustenance from the cutaneous tissues, and have their habitat either in the texture of the integument, as in the case of fungi and in scabies, or upon its surface, strictly speaking, as in pediculosis. The diseases due to the presence of a vegetable organism or fungus are designated by the generic term "tineæ": they comprise tinea favosa, tinea circinata, tinea tonsurans, tinea sycosis, and tinea versicolor. The two important animal parasitic affections are scabies and pediculosis.

The parasitic diseases of the skin occupy a prominent place in dermatology. They are met with everywhere; they occur, however, more frequently in some countries than in others. They are more common in populous, overcrowded cities than in the country. They are local affections, and consequently are amenable to external treatment. They are all contagious, although by no means so to the same degree; some are highly contagious, while others are so only under certain circumstances. As a group they incline to pursue a chronic course, and may continue for an indefinite period. They are all curable, and are relieved by a class of remedies known as parasiticides.

TINEA FAVOSA.

Syn., Favus; Porrigo Favosa; Crusted Ringworm; Honey-comb Ringworm; *Germ.*, Erbgrind; *Fr.*, Teigne Favuse.

TINEA FAVOSA IS A CONTAGIOUS, VEGETABLE PARASITIC DISEASE, DUE TO THE AECHORION SCHÖNLEINI, CHARACTERIZED BY DISCRETE OR CONFLUENT, SPLIT-PEA SIZED, CIRCULAR, CUP-SHAPED, PALE-YELLOW, FRIABLE CRUSTS, USUALLY PERFORATED BY HAIRS.

Symptoms.—The disease may attack the hairs and follicles (tinea

favosa pilaris), the epidermis (*tinea favosa epidermis*), or the nails (*tinea favosa unguium*); occasionally all of these structures are invaded at the same time. Its usual seat is the scalp. Other portions of the integument, however, non-hairy as well as hairy regions, are also not infrequently invaded; for example, the shoulders, arms, penis, scrotum, and thighs. It manifests itself at first by diffused or circumscribed superficial inflammation with slight scaling, followed by the appearance of one or of several pin-head sized, pale-yellow crusts, seated about the hair-follicles. In the course of a fortnight they will have increased considerably in size, and are then to be recognized with the naked eye as well-formed "favus cups" or "favi," presenting the following characteristics. They consist of a peculiar, dry, crust formation. They are circumscribed, circular in form, and are elevated from half a line to several lines above the level of the skin. In their early stage they are bound down to the skin by a layer of epidermis, which surrounds and overlaps their periphery. Later, when the crust assumes size, this attachment breaks, leaving the edges of the crust free and above the level of the epidermis. They are cup-shaped, possessing marked umbilication, through which one or more hairs usually protrude. In structure they are made up of a series of concentric layers compactly arranged one upon the other. In consistence they are firm, and in most cases retain their form until destroyed by violence. When taken up between the fingers they are more or less friable, and often crumble under pressure, like dry mortar. Owing to the concentric laminae, their surfaces are uneven; and not infrequently, from external causes, they are injured and broken, and then present a rough exterior.

Their color is pale yellow or sulphur-yellow. If they have existed for some time, the brightness of the hue will have become tarnished by the deposit of extraneous matter, as dust or applications which may have been used, and they will then possess a brownish- or greenish-yellow color, similar to that observed in pustular eczema. They are seated superficially upon the integument, and may usually be raised from their bed without difficulty. The skin beneath is depressed, smooth, and shining or atrophied; often covered with a delicate layer of epidermis; hyperæmic or inflamed; or in a state of suppuration. In old cases, where the skin is much irritated, pustules and suppuration not infrequently

occur beneath and around the edges of the crusts. The amount of disease and the number of crusts present vary; it is usual to meet with discrete lesions as well as with patches composed of two or more which have coalesced, forming irregularly-shaped masses, having somewhat of a honey-comb appearance. The size of the favi varies according to their age; as ordinarily seen, they are about the size of split peas.

Any part of the body may be the seat of *tinea favosa*; the scalp, however, as already stated, is its usual habitat.* Occurring here, the disease is sometimes complicated with pediculi, while swelling of the glands of the neck, and small abscesses upon the scalp, are not uncommon. The general surface of the body may also be attacked, either together with the scalp or alone. In rare instances, as in a case depicted in Hebra's Atlas, and in one more recently reported by Galliard,† the disease is generalized. The nails also are sometimes invaded, the growth finding its way even into the substance of the nail, causing it to become thickened, yellow, opaque, and brittle. It is generally observed to occur here in connection with *tinea favosa capitis*, and is accounted for by the patient's scratching the head and thus introducing the parasite beneath the nail. The disease possesses a peculiar odor, a symptom by which (when the affection is sufficiently developed) its presence may often alone be recognized, being that of mice or of stale straw. Usually it is plainly perceptible; in other cases it is faint. More or less itching accompanies the disease; it is generally one of the first symptoms noted, and may prove annoying.

The hairs in *tinea favosa* of the scalp undergo, as a rule, considerable change; they become lustreless, opaque, dry, brittle, and, at times, split longitudinally. In other cases they are less extensively invaded. After the disease has existed for some time, they loosen and come out or are scratched out, leaving bald patches with more or less atrophy of the follicles and sebaceous glands. The baldness eventually is in some cases permanent. The course of the disease is chronic; unless properly treated, it may last for years or for a lifetime. Even with energetic remedies it is usually

* See my Atlas of Skin Diseases, Plate O; also Fox's Photographic Illustrations of Skin Diseases, Part IV.

† Annales de Derm. et de Syph., 2me Sér., t. i. p. 97.

an obstinate affection, requiring the prolonged use of parasitocides and depilation. Relapses are liable to occur.

Etiology.—The cause of *tinca favosa* is found in the presence and growth of a vegetable organism, known as the *Achorion Schönleinii*. It was discovered by Schönlein, of Berlin, in 1839, and was named after him by Remak. The disease is eminently contagious. It not infrequently attacks several members of a family. I recall an instance (in London) where thirteen members of one family, brothers and sisters, were, in the course of years, affected; in another case, a mother and two children, constituting the whole family, were at the same time suffering from the disease. Similar instances are not rare. It does not, however, attack all persons with the same degree of readiness; some, owing to peculiarity of skin, state of the general health, or other conditions, are more prone to its influence than others. It is commoner in children than in adults. It usually attacks children in the first place, either *de novo* or through direct contagion, and is from them communicated to adults. It is a disease of the poor, being confined almost exclusively to the lower classes. It is only rarely met with upon the cleanly and well nourished. It is rare in the United States. White,* of Boston, out of 5000 consecutive cases of skin disease met with in dispensary practice, reports but 17 cases, and more than half of these were instances where two or three members of the same family were affected. In Philadelphia it is even rarer. In the table of statistics of the American Dermatological Association 32 cases out of 16,863 cases of skin disease are recorded. In Scotland, on the other hand, the disease is not uncommon, Anderson, of Glasgow,† reporting 156 cases out of 10,000 consecutive cases of skin disease encountered in dispensary practice. It is not an infrequent affection among certain animals, especially mice, rabbits, cats, dogs, horses, and oxen, from whom it is often communicated to man.

Pathology.—The disease may have its seat either in the hair-follicle and hair or upon the surface of the skin; the follicle and hair are the structures usually attacked. It is a local affection, and is due solely to the presence and growth of the parasite. The crust

* Bost. Med. and Surg. Jour., May 18, 1876.

† Lancet, Nov. 11, 1871.

is made up almost entirely of fungus. Upon section it is seen with the naked eye to be composed of a porous mass, and to possess a pale-yellow or whitish color. Under the microscope it is observed to consist of both mycelium and spores in great quantity, and in all stages of development. (See Fig. V.) The mycelium

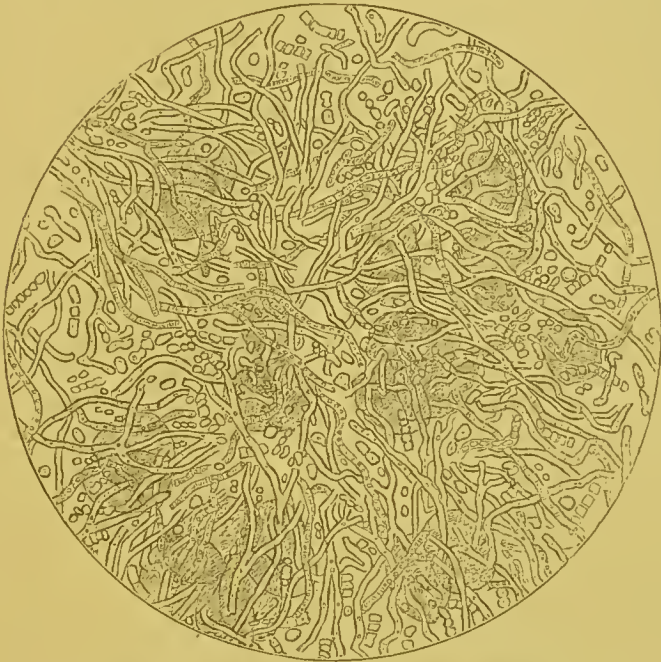


FIG. V.—ACHORION SCHÖNLEINII. (500 Diameters.)
Showing simple mycelium, receptacles, broken mycelium, and free spores.

is made up of narrow, apparently flattened tubes, or threads, which ramify in all directions without definite arrangement. They average from $\frac{1}{900}$ ''' (.0023 mm.) to $\frac{1}{700}$ ''' (.0030 mm.) in diameter,* and vary greatly in length. They are straight, curved, bent, or crooked, and incline to branch in a forked manner. They have a watery, pale-grayish or pale-greenish color. The character of the mycelium, which is usually abundant, differs considerably with the stage of growth. The filaments may be empty and simple in structure, or they may be in a state of fructification and contain spores, in which case they are known as "receptacles," "sporo-

* The measurements of the *Achorion Schönleinii*, *Trichophyton*, and *Microsporon Furfur* were made with $\frac{1}{25}$ th (Wales's) immersion lens, by Dr. J. G. Richardson and myself.

phores," or "spore-tubes." These differ from the simple mycelium in being here and there irregularly jointed, and in many instances divided into numerous, delicately marked, small partitions or spaces, containing granules and young spores, the contents varying with the stage of development. Often they are divided and broken up in such a manner as to have the appearance of the links of a chain; in time these become detached, either singly or in variously sized parts, and are found intermingled with the spores.

The spores, or sporules, called also conidia, are irregularly-shaped, small bodies, varying considerably in size. They average from $\frac{1}{900}$ ''' (.0023 mm.) to $\frac{1}{400}$ ''' (.0052 mm.) in diameter. They are round, rounded, or ovalish, elongated, contracted in the middle, or flask-shaped, and have a grayish or pale-greenish, nacreous color, refracting light in a marked manner. They assume no disposition to group, although they are frequently found in aggregations. They occur in great numbers, and are present everywhere, both in between the mycelium and in other portions of the field, being so numerous in some places as to form compact masses. Forms of the achorion intermediate between mycelium and spores are always present, and show the mode of development. Granular matter also exists.

The parasite may be discovered under the microscope without difficulty at all stages of the disease. It is the most abundant and luxuriant of the vegetable parasites. When the affection attacks the hairy portions of the surface, the hairs are in all cases more or less extensively invaded. It penetrates into the follicles and into the root, and develops here in quantity; or it extends itself up the shaft, in which case the hair is more or less disintegrated. This latter course, however, rarely occurs to the same extent as in *tinea tonsurans*. The seat of the fungus is therefore different in different cases, as in the case of *tinea tonsurans*. As a rule, the parasite does not extend itself to the living layers of the epidermis, but confines itself to the corneous cells. In a case examined by Unna,* the hair-bulb and the external root-sheath were found healthy. According to the same observer, in the epidermis the fungus tends to invade the middle cells, between the superficial

* Viertelj. für Derm. u. Syph., 1880, Heft 2 und 3.

and the deep portions of the corneous layer. In the corium the condition is partly that of chronic inflammation, and partly that of retention. Suppuration, slight or profuse, not infrequently takes place beneath the crusts, especially in chronic cases.

The disease when it attacks the nail may be readily detected in a section or in scrapings, presenting the same features as in the epidermis or hair, although the growth is seldom so luxuriant as in these latter structures, and consequently does not exhibit the same tendency to the formation of spores. Mycelium, in various stages of development, will usually be found to predominate. The achorion Schönleini is a distinct variety of fungus, and is capable of giving rise to one form of disease only, namely, *tinea favosa*.

Diagnosis.—In the majority of cases no trouble will be experienced in the diagnosis. The small, circular, pale- or sulphur-yellow, friable crusts, hollowed out in the shape of a cup or saucer, and seated upon a slightly inflammatory base, cannot be confounded with those of any other disease. At times, however, especially in chronic cases, they are broken, their peculiar form destroyed, and their surface coated with dirt and other extraneous matter, giving them an appearance not unlike the crusts of pustular eczema. Occasionally, also, the bases of favus crusts suppurate from excessive irritation of the scalp, and pustules may appear here and there around the favi, thus obscuring the primary disease. The peculiar odor is almost always present where the lesions exist in quantity, and usually affords a ready means of diagnosis. A history of contagion may often be obtained. In rare cases *tinea circinata* or *tinea tonsurans* may coexist with the disease. The microscope should always be employed in cases of doubt. No difficulty will be experienced in the examination. A small fragment of the crust should be placed upon a glass slide with a drop of liquor potassæ, and covered with a thin glass. A power of from two hundred and fifty to five hundred diameters is necessary to bring out the features described.

Treatment.—In the treatment we are influenced by the seat of the affection, its extent, and the length of time it has existed. Occurring upon the scalp, its favorite locality, it constitutes a rebellious disease, and demands thorough handling. The two remedies are parasiticide and depilation. Whatever parasiticide

is employed, it must be used energetically, and in such a manner as to insure the complete destruction of the fungus in the follicle as well as upon the surface. In chronic obstinate cases, follicular suppuration should be induced, thereby facilitating the expulsion of the diseased hairs. The hair is first to be cut as short as possible, after which the crusts are to be removed by means of poultices or applications of almond or olive oil, and soap and hot water, as in the case of pustular eczema of the scalp. After they have been removed, the scalp in severe cases will show marked depressions, areas of atrophy here and there, and more or less baldness, or patches of superficial ulceration with suppuration. This latter condition may bear a close resemblance to syphilitic ulceration.

Extraction of the hairs, or depilation, is now resorted to. It is a most valuable means of treatment; without it, indeed, cure, in the case of *tinea favosa capitis*, becomes a matter of great difficulty, if not impossible. Before depilation is practised, the part to be operated upon should on each occasion be well anointed with a simple oil, preferably almond oil. For the extraction of the hairs, a forceps with broad blades should be used, that the hairs may be firmly and securely grasped, to prevent their breaking off at the level of the skin, an accident which in the case of brittle hairs is liable to occur. A few hairs only should be seized at a time and pulled out in the line of their long axes. A small surface should be cleared each day. Immediately after the operation, one or another of the parasitocidal ointments or lotions is to be well rubbed into the part, and made to penetrate the hair-follicles. Corrosive sublimate, in the strength of three or four grains to the ounce, is one of the best parasitocides. Sulphite of sodium, one drachm to the ounce, as a lotion; sulphurous acid, full strength or diluted, as a lotion; sulphur, a drachm or two to the ounce of ointment; yellow sulphate of mercury, half a drachm or more to the ounce of ointment; oleate of mercury, ten or twenty per cent. strength; and croton oil, are all valuable remedies. In addition to these, the numerous remedies and combinations used in *tinea tonsurans* may be employed. The tarry preparations are also serviceable, either alone or in combination with other more active remedies, as the mercurials.

The length of time requisite to effect a cure in *tinea favosa*

capitis will depend upon its extent and other circumstances; it may be stated, however, that in ordinary cases from three to six months are necessary. Depilation is to be repeated daily until the new hairs assume a healthy state. They should be examined from time to time under the microscope. *Tinea favosa* of the epidermis is to be treated, after the removal of the crust, by one of the milder above-mentioned ointments, and is seldom rebellious. In treating the nail, the parasiticide should be rubbed into and beneath the free border of the nail; it should, moreover, be frequently cut and scraped. In addition to the means indicated for the cure of the disease, certain measures remain to be mentioned. Cleanliness is essential. It is, indeed, the first step in the treatment, and without it but little progress can be made. In some cases, good food, fresh air, and the use of tonics, in particular arsenic, will prove of benefit. The contagiousness of the disease should always be borne in mind.

Prognosis.—This will depend upon the duration and extent of the disease, as well as upon the general condition; impoverished and neglected individuals recover more slowly than those in better circumstances. The longer the disease is permitted to continue upon the scalp, the more likelihood is there of resulting baldness, atrophy, and cicatrix. *Tinea favosa* of the epidermis is seldom obstinate.

TINEA TRICHOPHYTINA.

Under this name are included three varieties of disease, known as *tinea circinata*, *tinea tonsurans*, and *tinea sycosis*. They may be regarded as modifications of one disease, inasmuch as they are produced by one cause, namely, the *trichophyton* fungus. This growth when it attacks the general surface of the body gives rise to the condition termed *tinea circinata*; the scalp, hair-follicles, and hairs, *tinea tonsurans*; the hair-follicles and hairs of the beard, *tinea sycosis*. Although the three affections are due to the same cause, they are nevertheless characterized by such distinctive features as to entitle them to separate description. Their treatment, moreover, is somewhat different.

TINEA CIRCINATA.

Syn., Herpes Circinatus; Ringworm of the Body; *Fr.*, Herpès Circiné; Trichophytie Circinée.

TINEA CIRCINATA IS A CONTAGIOUS, VEGETABLE PARASITIC DISEASE, DUE TO THE TRICHOPHYTON, CHARACTERIZED BY ONE OR MORE CIRCULAR OR IRREGULARLY-SHAPED, VARIOUSLY SIZED, INFLAMMATORY, SLIGHTLY VESICULAR OR SQUAMOUS PATCHES, OCCURRING UPON THE GENERAL SURFACE OF THE BODY.

Symptoms.—The disease varies greatly in the degree of its development. It may be a trivial affection, as is frequently the case in children, or, on the other hand, an extensive, chronic, and obstinate disease, as seen, for example, about the genito-crural region in the adult. The usual form of the disease may be described as follows. It begins as a small, reddish, scaly, rounded, or irregularly-shaped spot. It may be well or ill defined in outline. As the process advances, usually in the course of a few days, the skin becomes more inflamed, the patch generally assuming a more distinctly circular form, attended either by an increased branny desquamation or by the formation of minute papules, papulo-vesicles, or vesicles around the circumference of the lesion. When fully developed, the patches are usually circular, and slightly elevated, especially about the margins, which are sharply defined against the healthy skin. They tend to assume a distinctly annular character (whence the name ringworm), owing to the disposition which the process manifests of disappearing wholly or in part in the centre while spreading on the periphery. The patches may be the size of a small or large coin; as usually encountered they are about the size of a silver quarter dollar. One, two, or more may exist, in which latter case they are apt to coalesce, forming irregularly-shaped, roundish or ovalish patches, or variously sized semi-circles and segments of circles, sometimes assuming the form of serpiginous lesions. Ordinarily, however, but two or three are present, and these discrete and upon different parts of the body. They are pale, bright, or dull pinkish or reddish in color, and are usually surmounted with scanty, thin, shreddy, grayish, adherent scales, which are more abundant about the margin. In the centre of the lesion the surface is generally pale reddish and only slightly

scaly. The vesicles, papulo-vesicles, or even papules, as the case may be, when the irritation to the skin happens to be sufficient to produce them, exist about the periphery in the form of a ring, and are pin-point or pin-head in size. In rare instances, several concentric rings may be formed, as in a case reported by Unna.*

In the case of chronic ringworm, however, the disease assumes other and less defined characters. The lesions here are usually in the form of single or multiple, disseminated, small, reddish, slightly scaly, ill-defined spots, on a level with or but slightly raised above the surrounding skin. Not infrequently they are the size of a small or large finger-nail, and are irregularly shaped, and, as a rule, without line of demarcation. Their manifestation is generally insidious, and their development often rapid. Sometimes they attain considerable size before they are detected. They may occur upon any region, and not infrequently occur simultaneously on distant parts of the general surface. In some cases they tend to appear and to disappear spontaneously, the disease persisting in this manner over a period of years, the patient rarely being free of lesions. The fungus in these cases is generally scanty.

The disease, as a rule, shows no disposition to symmetry, although it may so happen through contagion in certain regions, as the thighs, that both sides of the body are symmetrically affected. All parts of the general surface of the body may be attacked; preference, however, is shown for certain regions, especially the face, neck, and backs of the hands. The axillæ, the inner surfaces of the thighs, the groins, and between the nates, are also common seats for the disease in adults; attacking these latter localities, it is apt to spread extensively and at times to be rebellious to treatment.

The disease to which Hebra gave the name "eczema marginatum," encountered in cavalry-men and others, and in women as well as in men, occurring chiefly about the fork of the thighs, buttocks, groins, and axillæ, is to be viewed as a severe form of tinea circinata. When it invades the thighs, its usual seat, it is designated TINEA CIRCINATA CRURIS. It may, moreover, be complicated with true eczema, this disease being usually secondary. The dermatitis set up is generally marked, as shown by

* Viertelj. für Derm. u. Syph., 1880, p. 165.

the redness, desquamation or discharge, pigmentation, and thickening of the skin. The disease, when fully developed, is characterized usually by extensive, hand sized or larger, irregularly-shaped, inflammatory patches with a sharply defined, marginate, more or less raised border. The patches generally coalesce, and the disease thus invades the greater part of the inner surface of the thighs and buttocks or the groins and mons veneris. It inclines to pursue a chronic course, spreading rapidly or slowly, and is accompanied by itching, which may be severe. This form of *tinea circinata* varies greatly in its development as seen in different countries. It manifests itself in a mild type here compared with that observed in some other countries. I have encountered many cases, but few of which were either of long standing or proved rebellious to treatment. Dr. Bulkley's* experience has been similar. The late Tilbury Fox,† of London, likewise found the inveterate form of the disease rare in his experience. It occurs in its most marked form in Southern Europe, for example in Austria, and in tropical countries, but even here frequently manifests itself in small patches and as a slight disease.‡

The course of *tinea circinata* is variable, depending upon the region attacked, age and general condition of the patient, climate, and other circumstances. It may run a brief course, lasting a few weeks, or, on the other hand, it may continue for months or years. Occasionally it exhibits a remarkable degree of obstinacy, showing itself repeatedly in the same region in the form of relapses, or manifesting itself from time to time in new localities. In most of the cases of this kind that have been under my observation, some of them for a period of years, the lesions have been remarkably superficial, small, and disseminated, appearing and disappearing in the most arbitrary manner. In children it is usually very amenable to treatment, and not infrequently pursues a course terminating in spontaneous recovery. In hot climates it is much more intractable than in temperate climates. It may coexist with *tinea tonsurans*.§

* Chicago Med. Jour. and Exam., Nov. 1877.

† Arch. of Derm., Oct. 1878.

‡ See "On Certain Endemic Skin and Other Diseases of India and Hot Climates generally," by Drs. Tilbury Fox and T. Farquhar, London, 1876.

§ See Plate E E in my Atlas of Skin Diseases.

The trichophyton occasionally attacks the nails, causing the condition known as TINEA TRICHOPHYTINA UNGUIUM. The nails become opaque, whitish, thickened, and soft or brittle, especially along their free border. The diagnosis is readily established under the microscope. It rarely happens that more than two or three nails are affected.* The disease pursues a chronic course, and is very difficult to cure.

Etiology.—It is caused by the presence of the trichophyton, a discovery made by Bazin in 1854.† It is the same growth which produces the forms of disease known as tinea tonsurans and tinea sycosis. It, however, shows itself in a somewhat different stage of development, seldom arriving at the luxuriant state attained in either of the just-mentioned varieties of disease. The affection is highly contagious, and is frequently communicated from one member of a family to another. The chronic forms, as seen sometimes in tinea circinata cruris, are less contagious. Tilbury Fox‡ describes an instance where seven persons, adults, and members of one household, contracted the disease one from the other. It may also be contracted from cows, oxen, and horses, the trichophyton being known to attack these animals. Mégnin§ mentions the instance of fifteen soldiers becoming simultaneously affected with tinea circinata of the face and neck from sleeping on horse-blankets which had been used on horses that had the disease. In these cases the disease is usually of a much severer type than when contracted from man. It is much more common in children than in adults, attacking infants as well as older children. Sometimes it occurs within a few days after birth. It has been observed as early as within six hours after birth, as in the case reported by Lynch.|| It occurs more frequently in some countries than in others. Anderson,¶ of Glasgow, reports 54 cases only out of 10,000 consecutive cases of skin disease encountered in dispensary practice; on the other hand, White,** of Boston, records 100 cases out of 5000 consecutive cases of skin disease met with at the out-door depart-

* See an article by the author in Med. and Surg. Reporter, Aug. 3, 1878.

† Considérations sur la Mentagre et les Teignes de la Face. Paris, 1854.

‡ Arch. of Derm., Oct. 1878.

§ Le Progrès Méd., Jan. 1, 1881.

¶ Med. Press and Circ., March 22, 1876.

¶ Lancet, Nov. 11, 1871.

** Bost. Med. and Surg. Jour., May 18, 1876.

ment of the Massachusetts General Hospital. In my opinion, all individuals are not equally susceptible to the ravages of the parasite. A certain condition of the skin, I have long held, is requisite for its development and growth. It will not take firm root upon every skin. The peculiar nature of the condition essential for its growth is unknown; in some cases, however, especially in adults, the disease is dependent upon a depreciation in the general tone of the system, consequent, it may be, upon chronic constitutional disease, as phthisis, or upon some temporary systemic derangement. I entirely agree with the late Dr. Tilbury Fox when he says, "something more than mere contact is needed in the adult to insure contagion." In children it occurs much more frequently among the weakly, pale, spare, and poorly nourished than among the stout and hearty. In the adult, however, this difference is not so marked.

Pathology.—The fungus alighting upon the surface finds its way into the epidermis, which it permeates in all directions. At first hyperæmia is produced, which is soon followed by superficial inflammation, with or without slight papulation or vesiculation, and desquamation. The seat of the parasite is in the epidermis, especially the corneous layer, and in this tissue only, although the irritation occasioned affects the true skin to such an extent as to give rise often to marked inflammation. (See *Tinea Tonsurans*.) As already stated, vesiculation may or may not be present; more or less desquamation, however, is always at hand, and is especially noticeable about the margin of the patch. As a rule, it is not abundant, the scales being thin, shreddy, and shrivelled.

Under the microscope the fungus is seen embedded in the epidermic cells in the form chiefly of mycelium, the spores existing usually scantily. (See Fig. VI.) The mycelium consists of long, slender, delicate, sharply contoured, pale-grayish, ribbon-like formations, or threads, containing spores and granules. It is jointed at irregular intervals, and is remarkable for its length, a single thread not infrequently extending itself over the field, sending off branches here and there in all directions. It varies from $\frac{1}{1200}'''$ (.0018 mm.) to $\frac{1}{800}'''$ (.0026 mm.) in diameter. It may pursue a straight, curved, or crooked course; it is, moreover, usually forked. Where the fungus is abundant, the threads cross and recross one another in such a manner as to form an irregular net-work.

The spores are small, round or rounded, highly refractive, persistent bodies, appearing of a grayish or pale-greenish color. They do not assume the manifold forms met with in the achorion Schönleinii or in the microsporon furfur. They vary from $\frac{1}{1000}$ '''

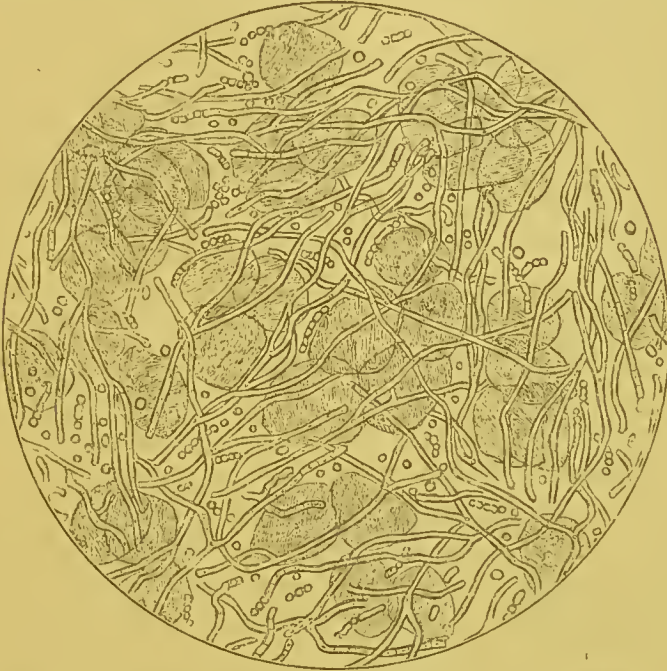


FIG. VI.—TRICHOPHYTON, AS FOUND IN TINEA CIRCINATA. (500 Diameters.)
Showing mycelium and spores.

(.0021 mm.) to $\frac{1}{600}$ ''' (.0035 mm.). They are met with singly or in the form of chains of two, three, or more, and may be isolated or joined to the mycelium. The fungus, as a rule, does not grow luxuriantly in tinea circinata as the affection is encountered in this country. Often it is scanty, but it may always be found in the early stage of the affection. Where the disease is of long standing, or is complicated with marked chronic inflammation, it is not infrequently difficult of detection. In tropical countries, on the other hand, it is usually abundant. The botanical relations of the trichophyton have been studied by Dr. I. E. Atkinson, of Baltimore.* His experiments go to show that the fungus belongs to the mucors, and is probably mucor mucedo.

* New York Med. Jour., Dec. 1878.

Diagnosis.—This may be determined either by the clinical features of the disease or by means of the microscope. Where the fungus exists in profusion, no trouble is experienced in demonstrating it under the microscope. The examination is best made in the following manner. A few of the scales may be scraped with a blunt knife-blade from the suspected patch and placed upon a glass slide containing a drop of liquor potassæ, over which is laid a thin glass cover. The cover should be pressed down and the epidermic mass flattened out. Permitting the specimen to remain for a few minutes, it may be viewed with a power of from two hundred and fifty to five hundred diameters. The fungus will in most cases be detected here and there, having at first a faint outline, but becoming more distinct as the specimen stands. It need scarcely be added that it is of importance that the slide and cover be scrupulously clean and free of shreds of lint and other extraneous matter. The mycelium is liable to be confounded with fibrils of wool and cotton, which often become involved with the specimen, but more especially with the margins of epidermic cells, which incline to overlap one another in a manner which gives rise to an appearance resembling short mycelium. The outline of mycelium, however, is always distinctly defined, its walls showing parallel lines; the threads usually stretch for a considerable distance over the field, and contain spores and granular matter. The spores are to be distinguished from extraneous fatty particles, as the fat of ointments which may have been used in the treatment; from sebaceous matter; from fat globules in fatty degenerated cells, as in seborrhœa; from the nuclei of cells; from pus and other cells; and from granular matter of one kind or another. Where fatty matter prevails, the specimen may be advantageously submitted to a few drops of ether.

Tinea circinata may be mistaken for eczema. It may resemble the erythematous, papular, vesicular, or squamous varieties, especially the latter. Its tendency to a circular and often annular form; its well-defined margin; its generally slight and shreddy desquamation; together with its course and history, will, however, usually render the diagnosis easy. The small, irregularly-shaped, slightly scaly spots, which incline to come and go from time to time, are much more difficult of diagnosis. The parasitic nature of spots of this character should always be suspected. The more

aggravated varieties of the disease, as encountered about the thighs and contiguous parts, may also resemble eczema closely, and may indeed, as stated, in some cases be complicated with eczema. The marginate character of the patches in these cases points in itself strongly to there being a parasitic element present. The microscope should in all such cases be employed. Errors in diagnosis may often thus be avoided.

Tinea circinata bears a close resemblance to seborrhœa of the chest and back. Patches of seborrhœa occurring in these regions often take on a circular and annular form and are accompanied with desquamation very similar to that of *tinea circinata*. Ringworm, however, may be known by its inflammatory nature, by its course, and by the absence of enlarged follicles and a greasy surface. It may also be mistaken for psoriasis, especially when the patch of psoriasis happens to assume the circinate form, as often occurs when the disease is about disappearing. The presence of psoriatic patches on other parts of the body, as well as the history of the case, will aid in the diagnosis. The microscope here, as in all doubtful cases, will decide the question.

Tinea circinata in its ordinary forms can scarcely be confounded with any of the manifestations of syphilis. When it is of long standing, and the skin chronically inflamed, as sometimes occurs about the thighs, it may be mistaken for the serpiginous tubercular syphiloderm. The microscope, the existence of other symptoms of syphilis, and the history will assist in arriving at a conclusion. It may be known from *tinea favosa* of the epidermis by the absence of the characteristic yellowish crust of this disease; the patch of *tinea favosa*, moreover, is usually smaller and less distinctly circinate than that of ringworm. The microscope will determine the diagnosis, for the two varieties of fungi are quite different.

Treatment.—As a rule, local treatment alone is required. In certain cases, however, particularly in adults, where the disease continues persistently in spite of parasitocides, internal remedies of a tonic nature should be generously prescribed. The preparations of iron, arsenic, quinine, cod-liver oil, and the mineral acids, will all be found serviceable. In the majority of cases, however, as the disease exists in this country, the fungus has but a feeble hold on the skin, and is easily destroyed by any of the parasitocides.

In the choice of a remedy the physician should be guided by the age of the patient, the extent and seat of the disease, whether localized or diffused, and the state of the skin as to the amount of inflammation, thickening, and irritability. In children the milder applications are usually sufficient to remove the disease. Washing the patch with soft soap and water and afterwards applying an ointment of ammoniated mercury, half a drachm to the ounce, will often suffice. Ointment of the nitrate of mercury, two or four drachms to the ounce of simple ointment; oleate of mercury, from five to fifteen per cent. strength; or the yellow sulphate of mercury, from fifteen to thirty grains to the ounce; may also be used. Corrosive sublimate is an excellent remedy, used as a lotion with water or alcohol in the strength of from two to four grains to the ounce. Carbolic acid, thymol, acetic acid, boracic acid, tincture of iodine, ethylate of sodium, and cantharidal colloid, painted over the patches, are also useful. Sulphurous acid, full strength or weakened, one part to two or four, in the form of a lotion; hyposulphite and sulphite of sodium, a drachm to the ounce, either as a lotion or as an ointment; are very serviceable, and are, moreover, safe remedies. An undoubted and efficient parasiticide, but one which should always be used with care, is goa-powder, in the form of an ointment, from ten to forty grains to the ounce. The remedy is highly esteemed in Eastern countries. Chrysophanic acid (chrysarobin) and pyrogallie acid, from five to twenty grains to the ounce, may also be used.* When the patches are in a state of irritation, as may occur from the too frequent use of strong parasitides, mild tar ointment, half a drachm or a drachm to the ounce, or carbolic acid ointment or lotion, ten or fifteen grains to the ounce, may be employed with benefit. In obstinate *tinca circinata cruris*, the following, recommended by Tilbury Fox, may be employed:

R Creasoti, ℥xx;
 Olei Cadini, fʒiii;
 Sulphuris Sublimati, ʒiii;
 Potassii Bicarbonatis, ʒi;
 Adipis, ʒi.
 M. Ft. ungt.

* For the manner of using these remedies the reader is referred to p 320.

Wilkinson's ointment as modified by Hebra (see Scabies) will also be found serviceable in these cases. Sulphurous acid, pyrogallie acid ointment, five or ten per cent. strength, and goa-powder ointment, of a similar strength, will likewise prove valuable here. Sulphur or mild mercurial vapor baths may in some cases be resorted to with advantage. Whatever the remedy used, care should be taken that the skin be not too much irritated; it should be remembered that the disease has a superficial seat, and is therefore, as a rule, easily reached. Ointments should be well rubbed into the affected part twice or thrice daily, special attention being directed to the borders of the patches. If weak lotions be used, as, for example, boracic acid or sulphurous acid lotion, they should be applied for ten or fifteen minutes on each occasion.

Prognosis.—It is not easy to predict the course of the disease. While the majority of cases yield readily to treatment, instances not infrequently present themselves, especially in adults, where the affection persists, usually in the form of relapses, for a long period. In children it may terminate spontaneously, or be cured usually with the aid of one or another of the simpler remedies. In some cases, however, even in children the disease is rebellious, the tendency to relapse being the difficulty. Tinea circinata of the thighs and neighboring parts is the most obstinate local variety.

TINEA IMBRICATA.—Under this name Dr. Manson, of Amoy, China, describes* a disease which he regards as essentially distinct from tinea circinata. It occurs chiefly about the Straits of Malacca and in the islands of the Malayan Archipelago. The term imbricata expresses the peculiar form of desquamation displayed. Starting from the point of inoculation, the epidermis becomes undermined, and finally detached in long flakes about one-eighth of an inch in breadth, the free edge of the flakes being directed towards the centre or point of inoculation, the convexity being firmly attached. If the hand be passed over the surface from the circumference towards the centre of the rings in the form of which the scales are arranged, the latter are smoothed down; if in the reverse direction, they are raised up and stand out prom-

* Medical Reports of the Imperial Chinese Maritime Customs, 16th issue, Shanghai, 1879.

inently, defining the wavy "watered" outline of the rings very distinctly. The formation of concentric circles is as follows. As soon as the primary ring has attained a diameter of about half an inch, a brownish patch is again seen to be forming at its centre. This, in its turn, cracks the young epidermis over it, and a second ring is formed inside the first, which it follows in its extension. This process may go on until the entire surface of the body is covered; and this is a point of difference between *tinea imbricata* and *tinea circinata*. Another difference is the enormous abundance of fungous elements in *tinea imbricata* and their scantiness in *tinea circinata*. The conidia of the fungus in *tinea imbricata*, moreover, are more oval than those of *tinea circinata*, while the mycelial threads are characterized by the absence of swellings and constrictions and other irregularities of outline which exist in the latter. Manson considers this affection identical with "Tokelau ringworm," a variety of disease described by Fox and Farquhar.* Manson has shown by inoculation experiments on the same individual that the fungus of *tinea imbricata* always produces *tinea imbricata*, and that of *tinea circinata*, *tinea circinata*.

TINEA TONSURANS.

Syn., Herpes Tonsurans; Trichonosis Furfuracea; Ringworm of the Scalp; Porrigo Furfurans; Tinea Tondens; *Germ.*, Scherende Flechte; *Fr.*, Herpès Tonsurant; Teigne Tondante; Teigne Tonsurante.

TINEA TONSURANS IS A CONTAGIOUS, VEGETABLE PARASITIC AFFECTION OF THE SCALP, DUE TO THE TRICHOPHYTON, CHARACTERIZED BY CIRCULAR OR IRREGULARLY-SHAPED, VARIOUSLY SIZED, SCALY, MORE OR LESS BALD PATCHES, SHOWING THE HAIR TO BE DISEASED AND USUALLY BROKEN OFF CLOSE TO THE SCALP.

Symptoms.—It usually begins in the form of a small, rounded, or irregularly-shaped, erythematous, scaly patch, which soon becomes the seat either of a ring of pin-head sized, ill-defined vesicles or pustules, ephemeral in character, and which terminate in desquamation, or of furfuraceous scales. It spreads rapidly, and in a short time in typical cases attains its characteristic features, when it consists of one or more circular, circumscribed patches,

* On Certain Endemic Skin and other Diseases of India and Hot Climates generally, pp. 59, 246. London, 1876.

varying in size from a small to a large coin, of a reddish, grayish, greenish-yellow, or bluish color, covered with fine or coarse scales, with the hairs broken off close to the scalp. The color varies with the complexion of the subject. In dark-haired children it is of a light or dark bluish-gray, leaden, or slate color. The scalp is more or less raised, and the follicles, as a rule, are prominent, giving the surface a goose-skin or "plucked fowl" appearance, which is characteristic of the disease, and which is most marked after the disease has existed for some time and the hairs have fallen out. The hairs are uniformly or more often irregularly short, rarely more than one or two lines in height, and are thickened, and twisted or bent. Their free extremities present a ragged, uneven, stubble-like or nibbled look, as though they had been broken off or had been cut with blunt scissors. They lack their normal lustre, are dull and lifeless, opaque in color, and upon extraction are found to be dry, harsh, and generally brittle. They are seated loosely in their follicles, but are liable to break off close to the scalp in an attempt to extract them. As the disease progresses, they incline to rupture, owing to the excessive infiltration of the fungus, and drop out of their own accord. As a result of the loss of hair, baldness, more or less complete, exists, which, however, is temporary, the growth of hair returning sooner or later. When the disease is fully developed, the scales are usually comminuted and are present in the form of a fine or coarse, adherent, grayish, powdery product. The patches vary in size from a small to a large coin. They are seldom larger than a silver dollar, although two or more upon the same region not infrequently run together, thus forming sometimes more extensive areas of disease. Where several patches have coalesced, palm or even hand sized areas may result. They may have their seat upon any part of the scalp, although they show preference for the vertex and the parietal region. More or less itching is generally experienced; sometimes it is one of the first symptoms noted. In other cases there is little or no itching. The disease may spread on to the side of the face, in which case it becomes *tinea circinata*. The two conditions may occur simultaneously or either may precede the other.* Permitted to run on without treatment, *tinea ton-*

* See my Atlas of Skin Diseases, Plate EE.

surans may continue indefinitely, as in the case of the other vegetable parasitic diseases; on the other hand, it may terminate in spontaneous recovery.

I have thus described the usual form of the disease. Unusual forms are also encountered, as, for example, where the lesions are disseminated and superficial, the process assuming somewhat the character of *tinea circinata* of the scalp. The lesions here resemble those of eczema or of seborrhœa.* The hairs in places may remain *in situ* and be apparently unaffected, while on other portions of the scalp short stumpy hairs may be seen. Traction upon the long hairs generally proves them to be loosely seated. Sometimes, however, they are securely lodged. These forms of the disease occur chiefly in light-haired subjects and among the poorly nourished and weakly.

Other variations, or deviations from the typical process, are also met with, and they are important from a diagnostic point of view. In the early stage of the disease the lesions may consist merely of a slight scaly patch, with or without hyperæmia or inflammation, the hairs being usually long and firmly seated. It is not until later that they begin to break and to appear as short stumpy hairs. In this stage the disease may also readily be mistaken for eczema or seborrhœa, especially the latter. Another variety is characterized by discrete or grouped small pustules, which tend to crust and so to form crusted patches. This form is seen usually late in the course of the disease, and is liable to be mistaken for pustular eczema. *

Chronic ringworm remains to be referred to. Here the disease has existed perhaps six months or one or two years, and presents features different from those described. The lesions consist of small or large, discrete or confluent, disseminated or localized, for the most part irregularly-sized, scaly patches. The scales may be scanty or abundant, and are generally noted to be heaped up into minute conical elevations about the hair-follicles, giving the surface the plucked-fowl appearance. The hairs are usually short, and the patch consequently partly bald, or they may be broken off close on a line with the scalp, giving the patch a punctate or

* See notes of cases by the author in *Med. and Surg. Reporter*, Aug. 3, 1878.

dotted appearance. This latter event occurs especially in dark-haired subjects. In blonds the hair is seldom broken off so short, while at times it may even be long, in which case the hair falls insidiously. Different lengths of hair are generally present. In chronic ringworm there is rarely any marked inflammation. The disease may be confined to a small area or may involve the greater part of the scalp, in the form of numerous small and large finger-nail sized lesions, with usually one or two larger areas.

Etiology.—The cause of the affection is found in the presence and growth of the trichophyton, the same fungus which gives rise to *tinea circinata*. The disease is a common one, and is met with universally. It is an affection of childhood, being very rarely encountered in adult age, and seldom after puberty. Tilbury Fox* speaks of meeting with it in the adult, but I have never seen it in persons over sixteen or seventeen years of age. On the other hand, it is rare in infancy. It is highly contagious, and may readily be communicated from one child to another by means of wearing-apparel, caps, combs and brushes, towels, and bed-linen. Its contagious properties are frequently manifested in schools and children's asylums, where a number of inmates may become affected at the same time. It is liable to attack all classes, the rich as well as the poor, but especially those who are poorly nourished, in ill health, or debilitated. It is often contracted from *tinea circinata* existing upon the mother or attendant.

Pathology.—Under this head are to be considered the changes which take place in the hair, hair-follicle, and epidermis, as well as the peculiarities of the fungus. The parasite was discovered by Gruby in 1844, and fully described by Malmsten in 1846, and named by him "*trichophyton tonsurans*." It invades the hair, hair-follicle, and epidermis. The hair, however, suffers most severely, becoming in a short time filled with the growth, to such an extent usually as to cause its disintegration and destruction. The follicle is also attacked, becoming distended and prominently raised. The fungus is the same as that of *tinea circinata*, and has been considered in connection with that disease. It exists here in a somewhat different stage of development. It is found in a state of exuberant growth, spores existing in great profusion. As seen

* Ringworm and its Management. London, 1878.

under the microscope, the broken hairs are invaded throughout their length with spores and jointed mycelium, the former markedly predominating. Often little or no mycelium is found. The spores are very numerous, and exist around the outside of the bulb and root, as well as inside the hair-substance, where they take more



FIG. VII.—TRICHOPHYTON, AS FOUND IN *TINEA TONSURANS*. (300 Diameters.)
Short, broken-off hair of scalp, invaded with free spores and chains of spores.

or less complete possession of the structure. They are found in rows running parallel to the filaments of the hair or in irregularly disposed masses. The bulb and root are usually so extensively invaded as to be literally crammed with spores, appearing as a solid mass resembling fish-roe. The hair is distended or ruptured here and there along its shaft, the filaments protruding at these points, giving its exterior an uneven or ragged surface. It is at times split up longitudinally, its component parts separated and

barely holding together. The free end of the shaft, at the point of fracture just beyond the level of the scalp, generally possesses a jagged, bristly, stubble-like extremity, consisting of broken filaments, between which spores may be found. (See Fig. VII.) The furfuraceous scales scraped from the surface of the patch may also contain fungus; but the disease attacks the hair to the comparative exclusion of the epidermis. The amount of irritation to the skin varies; frequently it is slight, giving rise merely to desquamation or ephemeral vesicles; in other cases it is severe, causing œdema and inflammatory symptoms with fluid exudation, as occurs in the variety of the disease termed *tinea kerion*, to be described.

The anatomical seat of the fungus varies in different cases. It may be seated only in the corneous layer of the epidermis and hair-shaft, or it may extend even to the subcutaneous tissue. The condition of the skin has been examined microscopically by Taylor,* who states that the fungus invades the substance of the hair as far down as the bulb, but that it never advances to any distance into this structure, nor, in fact, attacks living tissue, as the hair-papilla or root-sheaths. These observations are confirmatory of those of Thin,† whose studies were made upon the horse. Robinson,‡ on the other hand, found that both spores and mycelium, in varying quantity, isolated, grouped, or arranged in rows, were present in the mucous layer of the epidermis, and even in the corium.

Diagnosis.—In most cases the diagnosis is easy. The presence of numerous follicles deprived of their hairs should always lead one to suspect the disease. The existence of stumpy hairs is even more suspicious. Blackish dots, apertures of follicles containing broken-off hairs, disseminated over a partly bald surface, or in the form of scattered small areas, should also be viewed with suspicion. There are several diseases with which it may be confounded. Squamous eczema is frequently met with about the scalp assuming the form of patches which may resemble *tinea tonsurans*. The histories of the affections are different, and will usually suffice to distinguish them. In eczema there is no history of contagion, a point which can frequently be established in *tinea tonsurans*. Squamous eczema is usually a chronic disease; *tinea tonsurans*, on

* *Lancet*, Nov. 16, 1878.

† *Ibid.*, March 30, 1878.

‡ *New York Med. Jour.*, March, 1881.

the other hand, generally pursues a more rapid course and spreads progressively. The patches of eczema are not apt to be sharply defined or circular. The hairs in eczema remain firmly implanted in the scalp; in tinea tonsurans they are loose, and can be plucked out without causing pain. In eczema, moreover, the characteristic, thickened, twisted, brittle, or broken-off hairs, as well as the peculiar color of the patch, covered with furfuraceous scales, are absent. In doubtful cases the microscope will always reveal the presence of the parasite. Itching is a more prominent symptom in eczema than in tinea tonsurans. In some cases eczema may supervene upon or be complicated with the disease under consideration; but this occurrence is rare. In ringworm of long standing or in cases that have been treated, the diagnosis is much more difficult, and the microscope should always be employed.

Tinea tonsurans, especially the disseminated form, may very readily be mistaken for seborrhœa. The microscope here offers the easiest and sometimes the only solution of the question. Psoriasis may also present an appearance not unlike tinea tonsurans; but the healthy state of the hairs, and the quantity and character of the scales, as well as its course, will serve to distinguish it. Tinea favosa in its earliest stage, before the formation of the crust, may also be mistaken for the disease; in a short time, however, the characteristic crust shows itself, and no further difficulty will be experienced. Alopecia areata may also be confounded with tinea tonsurans, a mistake of not infrequent occurrence. In typical examples of alopecia areata, the absence of all hair from the patch, and the whitish, smooth, polished surface, will be sufficient to establish the diagnosis. In other cases, however, where the characteristic symptoms are wanting, recourse must be had to the microscope, which will at once determine the question.

The microscopic examination of the hair offers no difficulty. The parasite is readily detected. One or two of the short, stumpy hairs should be placed upon a slide with a drop of liquor potassæ and permitted to stand a few minutes, when, under a power of two hundred and fifty diameters, the fungus as well as the lesions of the hair will be visible. (See Tinea Circinata.) According to Duckworth,* the action of chloroform upon patches of tinea ton-

* Brit. Med. Jour., Nov. 1, 1873.

surans is specific, and serves as a ready test for this disease. If a few drops be poured upon a patch and allowed to evaporate, a peculiar appearance is observed in the affected hairs and upon the skin at the openings of their follicles; they become whitish or light yellow in color and remain so, the part looking as if sprinkled with a film of sulphur powder. Chloroform has no such effect upon healthy hair. The same change has been noted in connection with *tinea circinata*, *tinea versicolor*, and *tinea favosa* of the epidermis,* the patches assuming a whitish, powdery appearance.

Treatment.—It will be borne in mind that the same fungus exists here as in *tinea circinata*, although in a more luxuriant state of growth; the disease, consequently, is amenable to the remedies referred to in speaking of this disease. *Tinea tonsurans*, however, is very much more difficult to cure than *tinea circinata*, and usually demands active treatment. The scalp, as a rule, tolerates strong remedies. The destruction of the parasite, which has its seat in the hair-structure as well as in the follicle, is best accomplished by extraction of the hairs, together with the use of suitable parasitocides. As a rule, external remedies are all-sufficient to bring about a cure; in some cases, however, when the affection is of a severe type and is rebellious to local treatment, constitutional remedies, as iron, arsenic, and cod-liver oil, may be employed with advantage. Strict attention to cleanliness is important, not only with the view of hastening the cure, but also in order to prevent contagion. The patient should be provided with special wearing-apparel, combs, brushes, towels, and bed-linen.

The loose hairs about the edges of the patches, and the broken-off hairs over the surface, are first to be extracted. They are best depilated by means of a small, broad-bladed, short forceps, a few hairs only being seized at a time. A portion of the diseased hairs may thus be removed each day until the surface has been cleared. After each depilation a parasiticide is to be applied, in the form of an ointment, oil, or lotion, as may seem indicated. The choice of a remedy, and the strength, will depend upon the case. If the hairs are thoroughly invaded with the fungus, as demonstrated by the microscope, strong remedies causing follicular suppuration

* St. Bartholomew's Hospital Reports, vol. ix.

are demanded; if, on the other hand, the disease is superficial, some of the milder remedies may first be tried. Among these, sulphurous acid, full strength; sulphuret of potassium, thirty grains or a drachm to the ounce; hyposulphite of sodium, one or two drachms to the ounce; and boracic acid, may be mentioned as the most useful. In light-haired subjects, sulphurous acid, followed by sulphur ointment, frequently proves valuable. Sulphite of sodium, a drachm or two to the ounce, may be employed advantageously as an ointment. Besnier speaks well of boracic acid, fifteen grains; sublimed sulphur, fifteen grains; and vaseline, one ounce. The late Mr. Startin esteemed the following for light cases:

R Sulphuris Sublimati, \mathfrak{z}^{ss} ;
 Hydrargyri Ammoniaci, gr. x;
 Hydrargyri Sulphureti Nigri, gr. x;
 Misce et adde
 Olei Olivæ, $\mathfrak{f}\mathfrak{z}^{ii}$;
 Creasoti, gtt. iv;
 Adipis, \mathfrak{z}^{vi} .
 M. Ft. ungt.

An ointment composed of equal parts of carbolic acid, ointment of the nitrate of mercury, and sulphur ointment, is spoken of by Alder Smith* as being useful in recent cases where considerable surface is involved. The same ointment with less carbolic acid will be found better adapted to the majority of cases. The milder parasitocides should be used freely; in the case of lotions they should be applied often, and for ten or fifteen minutes at a time; ointments should be slowly and thoroughly rubbed into the patches, and also around their edges.

Corrosive sublimate, as an ointment, from two to five grains to the ounce, or as a lotion, from two to five grains to the ounce of water or alcohol, sometimes answers well. It has also the advantages of being cleanly, of having no unpleasant odor, and of not discoloring the skin. Ammoniated mercury and red oxide of mercury, from thirty to sixty grains to the ounce, and ointment of the nitrate of mercury, will be found useful in the various stages of ordinary cases. Where the disease is disseminated and superficial, from one to three drachms of carbolic acid to the

* *Lancet*, vol. i., 1880.

ounce of glycerine will frequently be of service, either alone or in connection with other remedies. Thymol may also be used. Malcolm Morris speaks well of a mixture of thymol, half a drachm; chloroform, two drachms; olive oil, six drachms. In the more chronic forms of the disease, oleate of mercury, ten or twenty per cent. strength, will be found valuable. Tincture of iodine, the usual or double strength, also proves serviceable. A preparation much used in London, known as Coster's paste, is the following:

R Iodini, ℥ii;
Olei Picis, f℥i.
Misce et solve.

N.B. The iodine and oil of tar should be gradually and slowly mixed.

It is painted upon the patches with a brush and allowed to remain on until the crust is cast off, in the course of five or six days, when it may be reapplied. A few applications often suffice. Equal parts of tar ointment and sulphur ointment, or sulphur ointment alone, are both useful.

For chronic cases, painting the patches with glacial acetic acid or cantharidal collodion once a week or oftener, and making use of one of the milder parasitocides, as sulphurous acid or sulphur ointment, in the mean time, is a good method of treatment. Where the disease is confined to small areas and proves rebellious, the artificial production of tinea kerion by means of the cautious application of eroton oil will be found valuable. The remedy is a severe but most useful one. Frequently it will cure where all other remedies have failed. It may be used pure, care being taken not to allow it to run over the edges of the patch, or weakened with two or four parts of olive oil. I usually apply the pure oil, employing it at first sparingly. It is apt to involve the skin considerably beyond the line of application, a practical point which should be remembered. The part should subsequently be poulticed and then depilated. The application is to be repeated as may be necessary to set up the requisite amount of follicular suppuration. The oil should be applied in every instance by the physician himself.

Prognosis.—This must depend upon the length of time the affection has continued, the number of patches, and also the state

of the general health. Some cases yield readily; others are extremely obstinate, months often being necessary to effect a cure. In children who are poorly nourished it is always more rebellious than in the well cared-for. In asylums and schools it is usually much more difficult to control than in isolated cases. Spontaneous cure may take place, although, as a rule, the disease when left to itself tends to run on indefinitely. Relapses are extremely liable to occur, and should always be guarded against. The case should be inspected from time to time for at least a month after the disease has been pronounced cured.

TINEA KERION.—Under this name is to be described a peculiar form of *tinea tonsurans* occasionally met with. It was originally described by Celsus; more recently by Wilson, Tilbury Fox, and others. It may be viewed as an inflammatory and suppurative form of *tinea tonsurans*, characterized by œdema, inflammation, and the exudation of a viscid, glutinous, yellowish secretion from the openings of the hair-follicles. The condition is analogous to that frequently seen in *tinea sycosis*. It may occur with the usual form of *tinea tonsurans* or alone. It begins generally as ordinary *tinea tonsurans*, and is followed in a short time by tumefaction and deep-seated subacute inflammation. When fully developed, the patches are yellowish, reddish, or purplish in color, and are more or less raised, œdematous, and boggy. They are uneven and honeycomb-like (whence the name *kerion*), and studded with yellowish, suppurative points, or, later, with small cavities, or foramina, the openings of the distended hair-follicles deprived of their hairs, which discharge a mucoid, gummy, honey-like fluid. The secretion may be copious or scanty, according to the amount of cutaneous disturbance. The patches are generally more or less tender or painful, and at times the seat of itching and burning. The course of the affection is generally chronic: it may continue indefinitely unless checked by treatment. Sometimes, however, the disease thus cures itself. In severe and protracted cases the hair-follicles are destroyed, and there results baldness. The causes which occasion this form of the disease rather than that usually encountered, namely, ordinary *tinea tonsurans*, are not known. It is met with in the upper classes as well as among the poor, although more common among the latter. It is rare in Phila-

delphia; less so, I believe, in New York. It is to be diagnosed from subcutaneous abscess, which it at times closely resembles. The treatment is that of tinea tonsurans, sulphurous acid proving especially useful in my hands.

TINEA SYCOSIS.

Syn., Sycosis Parasitica; Sycosis Parasitaria; Sycosis Contagiosa; Parasitic Sycosis; Parasitic Mentagra; Barber's Itch; *Germ.*, Parasitäre Bartfinne; *Fr.*, Trichophytic Sycosique; Sycosis Parasitaire.

TINEA SYCOSIS IS A CONTAGIOUS, VEGETABLE PARASITIC AFFECTION, DUE TO THE TRICHOPHYTON, CONFINED TO THE HAIRY PORTION OF THE FACE AND NECK IN THE ADULT MALE, CHARACTERIZED BY DISEASE OF THE HAIR AND HAIR-FOLLICLE, INFLAMMATION OF THE SKIN AND SUBCUTANEOUS CONNECTIVE TISSUE, AND THE FORMATION OF TUBERCLES AND PUSTULES.

Symptoms.—The disease generally begins with one or more reddish, slightly scaly patches, the size of a small coin; in fact, as tinea circinata. In the course of a few days the redness and desquamation become more marked, and swelling and induration are noticed. Soon the hairs also are noted to be affected; they are dry, brittle, incline to break, and are perhaps already loose. The disease increases, until in a short time the skin becomes distinctly nodular and lumpy, with points of pustulation about the openings of the hair-follicles. Not only the skin but also the deeper tissues are involved, giving rise to raised, thick, firm masses of induration. The surface is of a deep-reddish or purplish color; has usually a passively congested appearance; and is studded with variously sized discrete or confluent tubercles or pustules.

The tubercular formations are characteristic of the disease. They vary as to shape and size, but are for the most part irregularly rounded and as large as split peas or half cherries. As a rule, they coalesce, producing large, uneven, lumpy patches, occupying usually considerable surface.* In rare cases the lesion may be single, coin sized, sharply circumscribed, and prominently raised, as much as half an inch. The amount of suppuration varies, depending upon the irritation of the fungus and the grade of inflammation. In certain cases it is an early symptom, and

* See my Atlas of Skin Diseases, Plate S.

proceeds actively, pustules of all sizes forming about the follicles. At times these break down, and are succeeded by thick crusts similar to those of pustular eczema, which may be so abundant as completely to mask the true nature of the disease. Beneath them will usually be found an uneven, moist or excoriated, reddish surface, with yellowish points, discharging a glairy, glutinous material, and resembling in appearance the cut surface of a fig (whence the name sycosis). In other cases but slight pustulation takes place, the process being one rather of deep-seated tubercular induration throughout its course.

The hairs are plainly diseased; they are dry and brittle, bent or broken off, either at their exit from the follicles or at a line or two above the level of the skin, and can be extracted without pain. Later, the hairs loosen spontaneously, through suppuration or disintegration from excessive invasion of the fungus, and drop out, leaving the region partly or wholly devoid of hair. In other cases the hair-follicles and hairs are involved to a less extent, so that loose hairs are found only here and there; the disease being one midway between *tinea circinata* and *tinea sycosis*. The chin, the neck, and the submaxillary region are the localities commonly attacked; the upper portions of the cheeks and the upper lip are rarely invaded. The disease may occur on one side of the face only, or, as is usually the case, on both sides; not infrequently the whole of the region of the lower jaw is involved. The amount of itching, burning, and pain varies; at times these symptoms are slight, in other cases annoying or severe; they are, however, as a rule, disproportionate to the severity of the lesions and cutaneous disturbance, and are seldom so marked as in non-parasitic sycosis. The course of the disease is usually chronic. A few weeks generally suffice for it to present its characteristic appearance, after which it may continue spreading or subside into an inactive state. When left to itself, it may last months or years. Unless thoroughly treated, it tends to relapse. It may develop from a previous *tinea circinata* of the non-hairy part of the face or of some other region of the body; or it may occur simultaneously with a *tinea circinata* of the general surface.

Etiology.—The cause is found in the presence and growth of the *trichophyton* fungus, which invades the hair-follicle and hair. It is the same parasite as that of *tinea tonsurans* and *tinea circinata*.

Its parasitic nature was pointed out by Gruby in 1842. It is eminently contagious, and is acquired in most cases at the hands of the barber. All individuals, however, are not equally susceptible to the influence of the parasite; out of a number who have been exposed to contagion, certain persons only will contract the disease. Like the other vegetable growths, it seems to require some peculiar, unknown condition of the skin for its development. It is not a common disease. Its frequency varies greatly in different countries; it seems to vary, moreover, in different sections of our own country. In Boston it is about as common as *tinea tonsurans*; out of 5000 consecutive cases of skin disease met with in dispensary practice, White* reports 38 cases of *tinea sycosis* and 42 cases of *tinea tonsurans*. Wigglesworth,† out of 1339 consecutive cases of skin disease, reports 8 cases of *tinea sycosis*. In New York the disease is of decidedly less frequent occurrence; Bulkley‡ encountered but 2 cases among 1617 cases of cutaneous disease as met with in dispensary practice. In Philadelphia, in dispensary service, the proportion is even less; out of 1267 consecutive cases of skin disease observed at the Dispensary for Skin Diseases, no cases of *tinea sycosis* were recorded. The disease in this city, however, is by no means so rare as these figures would indicate, for my private practice not infrequently affords examples. In Glasgow, Anderson§ reports but 18 cases out of 10,000 consecutive cases of skin disease in dispensary practice, and 6 cases in 1000 cases of skin disease in private practice. In France *tinea sycosis* is without doubt much commoner than in any other country; at the St. Louis Hospital, Paris, cases are of frequent occurrence. In Vienna, on the other hand, the disease is very seldom encountered. It occurs among all classes of men and at all periods of life, although more common between the ages of twenty and forty than later. It is met with in the weakly and in the robust, and does not appear to be in any way dependent upon, or influenced by, the state of the general health.

Pathology.—The fungus finds its way into the hair-follicles, as

* Bost. Med. and Surg. Jour., May 18, 1876.

† Annual Reports of the Dispensary for Skin Diseases, Boston, 1873, 1874.

‡ American Practitioner, May, 1875, and April and May, 1876.

§ Lancet, Nov. 11, 1871.

in the case of *tinea favosa*, penetrates them deeply, and produces its mischief chiefly about the root and in the shaft of the hair. Both the follicle and the hair become invaded to such an extent



FIG. VIII.—TRICHOPHYTON, AS FOUND IN TINEA SYCOSIS. (300 Diameters.)
Short, stout hair of beard, with the root-sheath attached to root, showing free spores and chains of spores.

as to bring about inflammation, followed by more or less follicular suppuration and general infiltration of the tissues. The irritation caused by the parasite is great, occasioning inflammation of the subcutaneous connective tissue, and the well-known tubercular formations peculiar to the disease. They are firm, comparatively painless, and manifest but little disposition to undergo change,

remaining so long as the fungus luxuriates, finally disappearing gradually without leaving scars.

Under the microscope the affected hairs are seen to be swollen, at times twisted, and disintegrated about their roots. Their bulbs are often obliterated. About their exterior, especially around the root, and within their structure, the fungus is plainly discernible. It shows itself, as a rule, abundantly, and consists of both mycelium and spores, the spores predominating, as in the case of *tinea tonsurans*, although usually to a less extent. (For a description of the fungus, see *Tinea Circinata* and *Tinea Tonsurans*.) In hairs which have not been destroyed, mycelium may usually be found ramifying over the root, and in the root-sheath, which often comes away upon extraction attached to the root and bulb of the hair. In other cases the fungus is scanty, varying as to quantity in different hairs.

Diagnosis.—Difficulty is occasionally experienced in distinguishing between *tinea sycosis* and *sycosis non-parasitica*. The points of difference, however, are usually so marked that error can scarcely occur. In *tinea sycosis* the skin and the subcutaneous connective tissue are extensively involved, as manifested by the induration and the formation of the characteristic tubercles. In *sycosis non-parasitica* the seat of the process is confined to the hair-follicles, the surrounding as well as the deeper tissues being implicated, as a rule, to a comparatively slight extent. The inflammation in *sycosis non-parasitica* is usually of an active type, and is followed generally by free suppuration; in *tinea sycosis* it is less active, is deeper-seated, and is attended by less suppuration. The pain or itching in *tinea sycosis* is seldom severe, and usually less so than the appearance of the disease would indicate. In *sycosis non-parasitica*, in extensive cases, the pain and burning sensations are at times severe. The upper lip is rarely invaded in *tinea sycosis*; it is very frequently attacked in *sycosis non-parasitica*. The hairs in *tinea sycosis* are dull, dry, swollen, often twisted, and brittle; in *sycosis non-parasitica* they are generally healthy in appearance. In *tinea sycosis* they are loose, and may be extracted without pain; in *sycosis non-parasitica* they are often firmly seated in their follicles. In *tinea sycosis* the microscope reveals the parasite, the presence of which establishes the diagnosis conclusively. (See *Tinea Circinata* and *Tinea Tonsurans*.)

Tinea sycosis bears also some resemblance to pustular eczema of the face, but the history and course of the diseases are so dissimilar as scarcely to permit of their being confounded. Pustular eczema develops itself, as a rule, rapidly, and is accompanied with itching, burning, discharge, and crusting. The presence of the induration and tubercular formation, and the looseness of the hairs, will moreover serve to distinguish it from eczema. The disease at times resembles the vegetating syphiloderm as it attacks the face in the form of hypertrophic, superficially eroded, raspberry-like, moist or crusted papules. No ulceration, however, takes place in *tinea sycosis*. The microscopic examination of the hairs, moreover, together with the history, will clear away all doubt. Chronic, circumscribed *tinea sycosis*, where perhaps but one patch exists, might be mistaken for epithelial cancer; but with attention to the history, course, and clinical features of the disease, error is not likely to occur. It may also be confounded with indurated acne, from which, however, it may be known by its never appearing upon the non-hairy parts of the face, as the cheeks and forehead, the usual seats of acne. In doubtful cases, where, for example, acne shows itself about the neck, the hairs should be submitted to the microscope.

Treatment.—Depilation and the use of parasiticides are both demanded. Where crusts exist, they should be loosened with inunctions of almond or olive oil, and removed by washings with soft soap and warm water, after which shaving is to be instituted. This is an important step in the treatment. The operation should be performed about every other day, allowing time for the hair to grow sufficiently to depilate. The process may be somewhat painful at first, but in a short time it may be readily accomplished. The operation is seldom so painful as one would suppose. One of the parasiticides should now be applied. On the following day thorough depilation is to be performed, in the manner described in connection with the treatment of *tinea favosa*. The condition of the hairs will be found to vary; at times they are loose over the whole affected part, and may be extracted with ease, while in other cases they are so only here and there. Their state depends altogether upon the manner in which the parasite has attacked the skin and follicles, whether superficially or deeply. Shaving and depilation,

upon alternate days, should be perseveringly practised until the new hairs show themselves to be healthy.

In the choice of a parasiticide one should be guided by the stage of the disease, its extent, and the general condition of the surface of the skin. A weak or a strong preparation may be selected to suit the demands of the case; for the first few days it is well not to employ too stimulating remedies. Corrosive sublimate, two or three grains to the ounce of water or alcohol, constitutes an excellent lotion, suitable to any stage of the disease. The yellow sulphate of mercury, in the form of an ointment, thirty grains to the ounce, may often be used with the best of results. Of the milder remedies, hyposulphite of sodium, as an ointment, or as a lotion, a drachm to the ounce; and sulphurous acid, full strength or diluted, are the most valuable. In addition to these remedies, any of those recommended for the other vegetable parasitic diseases may be made use of. Whichever the remedy selected, it should be applied thoroughly twice or thrice daily in such a manner that it penetrates the hair-follicles.

Prognosis.—The disease is sometimes rebellious; one or two months may be necessary to effect a cure. Relapses are liable to occur if the treatment be neglected or be discontinued too soon. Shaving should be persisted in for several months after all trace of the disease has disappeared.

TINEA VERSICOLOR.

Syn., Pityriasis Versicolor; Chloasma (Wilson); Mycosis Microsporina; *Germ.*, Kleinflechte; *Fr.*, Pityriasis Versicolor.

TINEA VERSICOLOR IS A VEGETABLE PARASITIC DISEASE, DUE TO THE MICROSPORON FURFUR, CHARACTERIZED BY VARIOUSLY SIZED, IRREGULARLY-SHAPED, DRY, SLIGHTLY FURFURACEOUS, YELLOWISH, MACULAR PATCHES, OCCURRING FOR THE MOST PART UPON THE TRUNK IN ADULTS.

Symptoms.—The disease begins by the formation of pin-head and split-pea sized, yellowish spots, scattered usually here and there over the affected region. In the course of a few weeks or months they will have increased more or less in size, and will have undergone certain other changes, the disease now presenting the following more definite characters. As it is ordinarily en-

countered, the lesions vary considerably in size; at times they are split-pea and finger-nail sized, in other cases much larger. They not infrequently unite and form patches which may occupy a large surface, as, for example, the greater part of the chest. In shape they are at first usually roundish; later, when they have coalesced, this form is usually lost, irregularly-shaped patches taking their place. The outline of the disease is generally sharply defined against the sound skin, more particularly around that portion which is spreading. Very rarely they may assume an annular form, as in the case reported by Unna.* The number of the lesions varies; there may be but two, three, or a half-dozen, or, on the other hand, as is usually the case, a great many. They are pale yellow, buff, tawny, or brownish yellow in color. In rare cases, in Oriental countries, they may even be black, as reported by Manson. At times they possess a reddish hue, due to hyperæmia. In patients who are stout, and in those who perspire freely, a reddish tint is not infrequently noted, especially in summer. Occasionally, in sensitive skins, the lesions become the seat of considerable irritation and hyperæmia, in which case they may assume a variegated, whitish and pinkish, urticarial aspect, and may be slightly raised. In the usual form of the disease, however, they are so slightly elevated above the level of the surrounding skin as to be scarcely perceptible. The patches are the seat of more or less furfuraceous desquamation, varying with the amount of bathing and perspiration, and the degree of scratching to which they have been subjected. At times they have a smooth appearance and feel, but the scaling may always be detected by rubbing or scraping the surface. The scales are very fine, and are of a powdery or mealy character. The patches are made up entirely of these scales, which, although more or less adherent to the skin, may be readily scraped away with the finger-nail. If the surface be moist, they cohere, cake, and come away in masses or in rolls, as a soft, cheesy substance.

The disease is peculiar in the regions upon which it shows itself. Its favorite seats are the chest, abdomen, groins, axillæ, and arms; it is also met with about the neck, on the back, and on the thighs. On the other hand, it is never encountered on the scalp, hands, or feet. Very rarely it is met with on the face. Practically con-

* Viertelj. für Derm. u. Syph., 1880, p. 167.

sidered, it is a disease of the trunk.* It shows no disposition to attack those regions which are exposed to the light and air. At times, in cases of long standing, the whole trunk, from the neck to the groin, the back as well as the chest, becomes affected, forming an almost continuous coating or sheet of disease. The lesions assume no tendency to symmetry; they are, indeed, usually irregularly distributed, and when extensive and in large patches give the skin a mapped appearance. Itching, varying, however, considerably in degree, is often present. Its severity depends upon the activity of the growth. In some cases it is marked. As a rule, it is more pronounced in fleshy than in spare individuals. On the other hand, cases are not rare in which there is no itching whatever. The course of the disease is variable; at times it spreads rapidly, in other cases very slowly. It is, as a rule, a persistent disease. Without treatment it may continue for an indefinite period; examples are not uncommon where it has existed for many years. Relapses are of frequent occurrence, even in those cases where the treatment has been most judiciously carried out.

Etiology.—The cause of the disease is found in the presence upon the surface of the skin of a vegetable growth, called the microsporon furfur. It was discovered by Eichstedt, of Greifswald, in 1846.† The affection is contagious, although so only in a very low degree and only under favorable conditions. Cases are occasionally met with in which it has been communicated from husband to wife, and *vice versa*; also from sister to sister, and from brother to brother, particularly where they have occupied the same bed. Such instances, however, are exceptional. Its contagious properties are therefore feeble, differing in this respect from the other vegetable parasitic affections. It is usually met with upon persons between the ages of twenty and forty; it seldom, if ever, occurs before puberty, and rarely after fifty; I have never observed it in children. Both sexes are about equally affected. The health of those attacked varies. It is encountered in those enjoying the best of general health, also, and I think more frequently, in those

* See Plate G in my Atlas of Skin Diseases.

† Froriep's Neue Notizen aus dem Gebiete der Natur- und Heilkunde, Bd. xxxix. p. 270.

suffering from wasting diseases, particularly phthisis. It attacks the rich as well as the poor, and bathers as well as those who seldom bathe.

It is a common affection, and is encountered in all parts of the world, although there is considerable variation in the frequency of its occurrence in different countries and places. Wilson,* in London, records 131 cases out of 10,000 cases of skin disease met with in private practice; Anderson,† in Glasgow, only 106 cases out of 10,000 cases of skin disease in dispensary practice. In our own country, White,‡ in Boston, reports 13 cases in 1000 cases of skin disease in private practice, and 14 cases out of 1000 cases among dispensary patients. Bulkley§ gives similar figures for New York, he having encountered but 14 cases out of 1617 cases of skin disease in dispensary service. In Philadelphia, on the other hand, the disease is without doubt of more frequent occurrence than in any of the above-named cities: at my Dispensary for Skin Diseases, 33 cases were recorded out of 1267 consecutive cases of skin disease, and at the clinic for diseases of the skin at the Hospital of the University of Pennsylvania, 21 cases were observed among 1205 consecutive cases of skin disease. According to the statistics of the American Dermatological Association, 177 cases were encountered among 16,863 cases of skin disease. In India and in Eastern countries generally the affection is exceedingly common.

Pathology.—The *microsporon furfur* consists of mycelium and spores. The former is made up of slender, variously sized, for the most part short threads, which cross one another in all directions, forming an irregular, more or less intricate net-work. The threads vary considerably in their form; they are straight or curved, stick-shaped, jointed and angular, twisted or looped, fork-shaped, or crooked and wavy. They are simple and empty, or contain here and there spores and granules; the spores, often quite large, are particularly conspicuous about the joints. The ends of the threads are, moreover, often found tipped with single spores. The diam-

* *Journal of Cutaneous Medicine*, vol. iii. No. 11.

† *Lancet*, Nov. 11, 1871.

‡ *Third Annual Report of the State Board of Health of Massachusetts*. Boston, 1872.

§ *American Practitioner*, May, 1875, and April and May, 1876.

eter of the mycelium varies from $\frac{1}{1400}$ ''' (.0015 mm.) to $\frac{1}{550}$ ''' (.0038 mm.). The spores are small, variously sized and shaped (as in the case of the achorion *Sehönleinii*), round, ovalish or irregularly rounded, highly refractive, grayish or pale-greenish bodies, with or without nuclei, having a marked tendency to aggregate and crowd together here and there in groups. 'This

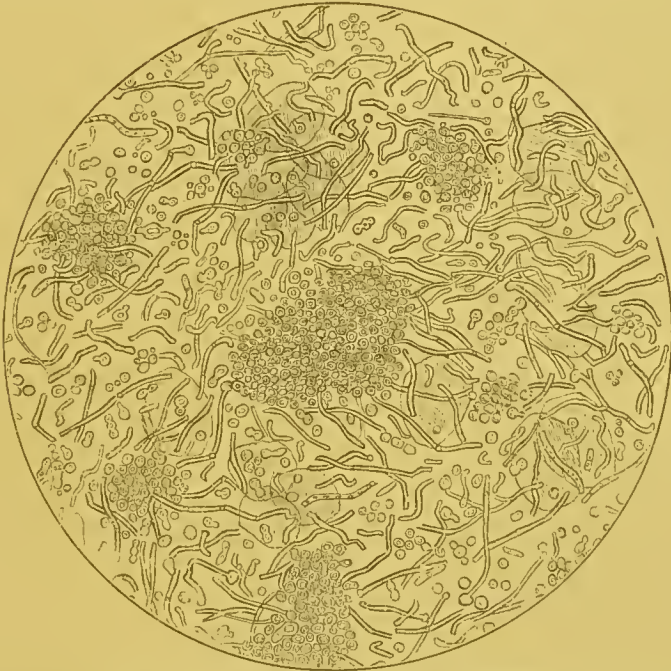


FIG. IX.—MICROSPORON FURFUR. (500 Diameters.)

Showing mycelium in various stages of development, groups of spores, and free spores.

arrangement is peculiar, and does not occur in connection with any of the other vegetable parasites. Large numbers of spores, closely packed, are generally present in these masses. Free spores are also met with everywhere over the field. Their size varies considerably; they measure from $\frac{1}{900}$ ''' (.0023 mm.) to $\frac{1}{250}$ ''' (.0084 mm.). The growth is found in every stage of development from mycelium to spore, and with a sufficiently high power (five hundred diameters) presents even more varied forms than the achorion *Sehönleinii*. (See Fig. IX.) The fungus is luxuriant, and is always present in such abundance that no difficulty arises in discovering it. Its habitat is in the horny layer of the epidermis, which it permeates to such an extent as to take com-

plete possession of it. It is the most superficially seated of all the vegetable parasites of the skin. It does not invade either the hair or the nail. It gives rise, as a rule, to no hyperæmic or inflammatory symptoms. At times it grows with great vigor; in other cases it seems barely able to sustain itself. As a rule, it is not tenacious of life, and may be destroyed without difficulty by any one of the numerous substances which exert a destructive influence upon vegetable organisms.

Diagnosis.—Difficulty will rarely be experienced in recognizing the disease. At the same time, examples occasionally present themselves where, from some peculiarity in the shape, size, coloration, or localization of the patches, the true nature of the affection is not entertained. If the patch, however, be but suspected of being parasitic, there can remain no doubt as to its nature, for the microscope will show the presence of the fungus. The mode of making the examination is simple. A few of the scales are scraped from the surface with a blunt knife-blade or with the finger-nail, and placed upon a glass slide with a drop of liquor potassæ, and covered with a thin glass cover. The specimen may be at once submitted to the microscope, a power of from two hundred and fifty to five hundred diameters being necessary to show the fungus to advantage. No difficulty will occur in finding the growth, for it is always abundant. The seat of the affection, almost invariably upon the trunk, especially about the chest, more particularly the sides, and the abdomen, the yellowish or brownish color, and the furfuraceous desquamation of the patches, are also to be borne in mind. If a patch be rubbed or scratched with the finger-nail, the scales will fall in the form of a fine dust or powder; or, if the surface be moist from perspiration or other cause, the epidermis will cake and form into rolls. Beneath the scales the skin will appear pinkish or reddish, according to the amount of irritation.

Care must be observed not to confound the disease with vitiligo, an affection of an entirely different nature, but one, nevertheless, which at times closely resembles tinea versicolor in some of its features. Vitiligo is an affection of the pigmentary system, whose seat is confined to the mucous layer of the epidermis; in tinea versicolor the process, it will be remembered, is seated in the horny layer of the epidermis. If a patch of vitiligo be scratched with

the finger-nail, no scaling will take place. Chloasma is another disorder of the pigmentary system with which it may be confounded. Here the process, as in vitiligo, consists in an increased pigment deposit, and is consequently seated in the mucous layer of the epidermis. Chloasma, moreover, as a rule, does not occupy the same regions as tinea versicolor; it is usually encountered about the face, a region very rarely attacked by the disease under consideration. The erythematous syphiloderm, in its latter stages, may also present a likeness to tinea versicolor; but error in diagnosis can scarcely occur if attention be paid to the characteristic features of either disease. It must be stated, however, that in practice the diseases are not infrequently confounded. In tinea versicolor the yellowish color, the variable size and shape, and the scaly surface of the patches, their course, and their seat, are all to be borne in mind. In syphilis the patches are usually indistinct in outline; are seldom larger than a finger-nail; present a more mottled appearance; are pigmented; are not surmounted with furfuraceous scales; are not accompanied by itching; and, finally, are apt to occur upon the face, limbs, hands, and feet, as well as upon the trunk. The diagnosis may always be definitely established by the microscope. The so-called pigmentary syphiloderm is so peculiar, and, moreover, so rare, that it is not likely to be confounded with the disease under consideration. As a word of caution, it must not be forgotten that tinea versicolor is quite as liable to show itself upon a syphilitic as upon a non-syphilitic person; the fact of an individual being syphilitic by no means precludes the possibility of contracting a vegetable parasitic disease. Finally, I may add that I have known cases where the patches of tinea versicolor have been regarded as the macular manifestation of leprosy; so gross an error, however, it need scarcely be remarked, is not likely to occur with one at all familiar with the disease.

Treatment.—The treatment is simple, and is followed by satisfactory results. A parasiticide of one kind or another, thoroughly applied, is all that will be found necessary for the complete removal of the disease. In the choice of a remedy, care should be exercised in selecting one of suitable strength, and at the same time one which may be conveniently applied by the patient. Strict attention to personal cleanliness should in all cases be enjoined.

Frequent washings with *sapo viridis* and water, and alkaline baths, consisting of two or three ounces each of carbonate of sodium and potassium to thirty gallons of water, are useful; also baths of sulphide of potassium, two ounces to the bath. *Sapo viridis* may also be employed as follows. A piece of the soap the size of a walnut or larger, according to the amount of surface to be treated, is to be thoroughly rubbed into the affected skin every morning and evening for five or six days, one coating of soap being applied over the other. The patient during this period is not to be permitted to bathe. Four or five days are now allowed to elapse, when the first bath is ordered, after which the disease will be observed in many cases to have disappeared. If patches still remain, the same course may be repeated, or the frequent use of soft soap in connection with the plain bath relied upon to complete the cure.

Good results are also obtained from the employment of ointments and lotions containing sulphite and hyposulphite of sodium. They may be prepared in the strength of one drachm to the ounce of ointment or of water. Sulphurous acid, full strength or diluted, is also a valuable remedy, applied as a lotion. Vleminekx's solution, diluted, one part to three or six, is also useful. Before using these preparations, the surface should be cleansed with water and soft soap. Corrosive sublimate will also be found serviceable in the form of a lotion, two or three grains to the ounce. Anderson* gives the following formula, of which he speaks well:

℞ Hydrargyri Chloridi Corrosivi, ℥i;
 Saponis Viridis, ℥ii;
 Alcoholis, f℥iv;
 Olei Lavandulæ, f℥ii.
 M.

This is to be well rubbed into the affected parts night and morning. Tincture of *veratrum viride* is also said to be efficacious. Boracic acid, in the form of a saturated solution, and diluted acetic acid are also useful. Whatever remedy be employed, it is proper to continue treatment with it for several weeks after all symptoms have disappeared, to guard against relapses, which are liable to

* Parasitic Affections of the Skin. Second edition, London, 1868.

occur if this precaution is not exercised. Should the patient manifest signs of general ill health and the disease prove intractable, in the form of repeated relapses, internal remedies, as may seem indicated, may be resorted to.

Prognosis.—This is always favorable. For an ordinary case, a few weeks are usually sufficient to bring about a cure, although much will depend upon the manner in which the applications are made. Sometimes the disease is rebellious. The patient should be warned against the liability of a relapse.

SCABIES.

Syn., Itch; *Germ.*, Krätze; *Fr.*, Gale.

SCABIES IS A CONTAGIOUS, ANIMAL PARASITIC DISEASE, DUE TO THE *SARCOPTES SCABIEI*, CHARACTERIZED BY THE FORMATION OF CUNICULI, PAPULES, VESICLES AND PUSTULES, FOLLOWED BY EXCORIATIONS, CRUSTS, AND GENERAL CUTANEOUS INFLAMMATION, ACCOMPANIED WITH ITCHING.

Symptoms.—Inasmuch as the disease presents a very different appearance as it is seen in its early or its later stages, it will be necessary to describe its course from the date of contagion. The itch mite no sooner finds itself upon the skin than it begins its work of burrowing; and here it may be mentioned that it is the female only which penetrates the epidermis. Once within the skin, a burrow, or cuniculus, is soon formed, in which numerous eggs are deposited, and which, moreover, serves as a habitat for the female during her life. The male is said never to enter the skin, but to live upon the surface. According as the mite penetrates superficially or deeply, and according to the susceptibility of the skin, will one or another lesion be produced. After a certain time from the date of contagion a variable number of mites will have been hatched forth, all of which at once begin to care for themselves and to burrow. Thus the early symptoms of the disease are manifested by the presence of a source of irritation at various points, characterized by the formation of minute more or less inflammatory puncta, papules, and vesicles. If the parts be now carefully examined here and there, the beginning of a cuniculus may usually be seen; although at this stage of the disease these will not have been formed to any extent. The lesions may

be either confined to a small area or be general; they may exist upon the hands alone, the parts usually first invaded, or they may be distributed over various regions. They increase rapidly, and in the course of a fortnight or three weeks the disease generally appears fully developed. The symptoms now consist of distinct cuniculi, numerous small papules, distended vesicles, and pustules, varying in size, excoriations, scratch marks, fissures, torn vesicles, and pustules with crusts and blood crusts, all seated upon a more or less acutely inflamed skin.* Not one or two but a number of lesions, it will be seen, go to make up the picture of scabies as it exists when fully developed. It is, indeed, by this multiform character of the lesions that the affection is best known. The disease spreads day by day, until finally, in the course of a month or six weeks, the whole cutaneous surface is involved, certain regions of the body always suffering more markedly than others, showing at times an extensive inflammation of the tissues. The older the scabies the greater will be the cutaneous disturbance, although by no means the more distinct the characteristic lesions, for these after a time become almost unrecognizable amid the crusts and excoriations.

Having thus described the general course of the disease, it is in place to refer to the individual lesions. The burrow, or cuniculus, as it is termed, is formed by the mite entering the skin and making its way beneath the horny layer of the epidermis, which is raised very much as a mole undermines the ground. It is to be seen as a slight linear elevation of the epidermis, varying from half a line to four or five lines in length, one or two lines representing the average length, having usually an irregular or tortuous course. In color it is whitish or yellowish, with a dotted, speckled look, or blackish, varying with the occupation of the patient and the amount of extraneous matter which has collected upon the surface. At either end it terminates abruptly, exhibiting usually darkish points; the more prominent and usually lighter of these represents the mite, which lies embedded in the mucous layer of the epidermis. Burrows, such as described, are commonly seen only about the fingers, for upon other parts of the body they become scratched before they have had time to arrive at any size.

* See my Atlas of Skin Diseases, Plate Q.

The papules, vesicles and pustules are peculiar, and differ in their appearance and course from those observed in other diseases. All of these lesions may usually be seen at the same time, in various stages of development. The papules are usually numerous, always small, and are generally the first lesions to make their appearance. Often the disease does not get beyond the papular stage. The vesicles may be either minute or large; ordinarily they are of various sizes and shapes; have an inflamed base; and stand forth prominently. Upon their summits cuniculi are sometimes seen. The vesicles may remain, or they may pass into pustules, which, if not disturbed, may increase to the size of split peas and larger. When large, they are apt to be more or less irregular in outline. They show no regularity of distribution.

The scratching of the patient produces secondary lesions, which play an important part in the disease. These scratch marks consist of excoriations of various kinds; torn papules, vesicles and pustules, lacerations of the epidermis and corium, and wounded follicles, being among the most conspicuous. Crusts, composed of blood, serum and pus, of all forms and sizes, follow these lesions, and are usually present in abundance, the amount depending upon the length of time the disease has existed, as well as upon the natural susceptibility of the skin and the degree of scratching indulged in. Lastly, the general cutaneous inflammation, or dermatitis, accompanied by infiltration, thickening, and pigmentation, is to be taken into consideration. As a rule, all of the symptoms referred to are present at the same time, and it will be seen that considerable tissue disturbance must necessarily be present. As remarked, however, this varies, according to the natural sensibility of the skin, the general nutrition and health of the individual, mechanical irritation, in the form of injudicious treatment, scratching, and other circumstances.

The regions of the body attacked are characteristic. The affection usually begins about the hands, and especially the fingers. The wrists, penis, and mammae are generally next invaded, followed by more or less eruption about all of the softer tissues of the trunk. The sides of the fingers and the folds where they join the hands are the particular localities attacked. In the male, the penis, owing to contact with the hands for the purpose of urinating, is almost invariably affected. In the female, the

mammæ, notably around and upon the nipples, usually show signs of the disease. The umbilicus, axillæ, and buttocks in both sexes are commonly invaded. The lower limbs are seldom involved to any great degree, except in cases of long duration: the toes, however, particularly in children, are often the seat of the affection. Itching, which is always present in a greater or less degree, is also a prominent symptom. It begins as soon as contagion has taken place, gradually increasing in intensity until it becomes severe. It varies greatly, however, with the susceptibility of the skin, as well as with the temperament of the individual. It is usually much worse at night.

In those predisposed to eczema, this disease, in addition to the simple dermatitis, is provoked by the itch mite in the same manner as by any other penetrating irritant. Hence, in countries where scabies is common, examples of the disease combined with eczema are by no means rare. On the other hand, where the patient possesses no disposition to the development of eczema, I hold that the disease produced by the mite is a simple dermatitis, characterized by the lesions already specified, which invariably terminates in more or less rapid recovery so soon as the cause has been removed. Sometimes scabies continues for months or years before it is detected or cured, in which case the symptoms are all greatly exaggerated.*

Etiology.—There is one cause only of the disease, namely, the presence of the *sarcoptes scabiei*. None are exempt from its ravages. It attacks all indiscriminately wherever the opportunity of burrowing itself into the tissues is offered. It arises from contagion, and only from contagion. This may be direct or indirect: the former when the mite is transferred directly from one person to another, as by a shake of the hand; the latter when it occurs through the medium of something which for the time holds the mite, as, for example, the bedding or the clothes. Secondarily, much of the disease which exists is caused by the scratching of the patient.

* The so-called "Norwegian Scabies" may be cited as an example of chronic scabies. Here the disease has often lasted a lifetime, the whole integument being in a chronically inflamed state and covered with pustules and extensive crusts.

Scabies occurs in persons of all ages, from infancy to old age, as well as in those in every walk of life; although, on account of inattention to cleanliness, the wearing of the same underclothes for a long time, and the more frequent sources of contagion to which the poor are subjected, it is of more frequent occurrence among this class. It is somewhat commoner in men than in women, from the fact that men are more apt to sleep together than women. It exists much more extensively in some communities than in others. It is the commonest of all cutaneous diseases in the various countries of Europe. In Glasgow, according to the statistics of Anderson,* it is of unusually frequent occurrence, 2527 cases having been encountered among 10,000 consecutive dispensary cases of skin disease, and 44 cases out of 1000 cases in private practice. In London, Mr. Wilson† reports 308 examples among 10,000 cases of cutaneous disease, as observed in private practice. In both Paris and Vienna scabies is exceedingly common, more so in the first-named city.

In the United States, at the present time, it is rare, varying considerably, however, in the frequency of its occurrence in the different large cities. The statistics of the American Dermatological Association give 148 cases among 16,863 cases of skin disease. It is more prevalent in seaport than in inland towns. White,‡ of Boston, reports 139 cases among 5000 consecutive cases of skin disease as met with at the out-door department of the Massachusetts General Hospital. In New York the disease is encountered more frequently; Bulkley§ gives 62 cases in 1617 cases of skin disease as observed in dispensary practice. In Philadelphia, at my Dispensary for Skin Diseases, there were but 9 cases out of 1267 consecutive cases of skin disease; while at the clinic for cutaneous diseases at the Hospital of the University of Pennsylvania, only 3 cases were encountered among 1205 consecutive cases of skin disease. During the period of the late civil war the disease was much more prevalent throughout the country. The so-called "army-itch" possesses no peculiarities, and is to be regarded as ordinary scabies.

* *Lancet*, Nov. 11, 1871.

† *Journal of Cutaneous Medicine*, vol. iii. No. 11.

‡ *Bost. Med. and Surg. Jour.*, Jan. 27, 1876.

§ *Amer. Pract.*, May, 1875, and April and May, 1876.

Pathology.—Under this head may be described the anatomy of the mite, its habits of life, its habitat, and the lesions to which it gives rise. The *sarcoptes scabiei* (termed formerly *sarcoptes hominis*, by Raspail, and *acarus scabiei*, by De Geer) is a minute creature, barely visible to the naked eye as a yellowish-white, rounded body. It belongs to the class Arachnoidea, order Acarina, and family Acaridæ. The female is usually met with, the male probably taking no part in causing the cutaneous lesions, and

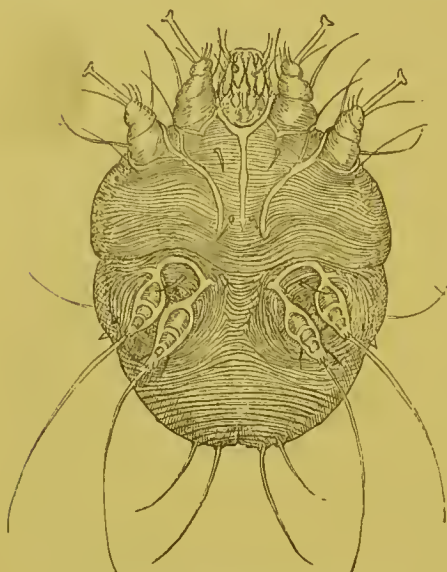


FIG. X.—*SARCOPTES SCABIEI*. (125 Diameters.)
Female. Ventral surface.



FIG. XI.—*SARCOPTES SCABIEI*. (125 Diameters.)
Male. Ventral surface. (After Lanquetin.)*

for this reason being very rarely encountered. The adult female has an ovoid body, convex on the back and flat on the belly, marked with two slight indentations on either side, and numerous transverse, undulating lines running over its ventral surface. (See Fig. X.) On the back are rows of conical, tooth-like prominences, or spines, with on either side of the posterior part of the body a series of larger, spike-shaped processes. The head is small, of a rounded oval shape, and is closely set in the body; it is a complex structure, made up of palpi and mandibles, and is provided with six small hairs. Eyes do not exist. The legs are conspicuous and

* Notice sur la Gale et sur l'Animaleule qui la produit. Avec planches gravées. Seconde édition, Paris, 1859.

are eight in number, four being situated close to the head, and four posteriorly. The four front legs are short, stout, conical or teat-shaped, jointed bodies, and are provided with stalked, cup-shaped suckers, and hairs. The hinder legs come off from the posterior half of the middle of the body, are less bulky than the front legs, and are each armed at their extremities with a long, curved bristle. In addition to the legs there are bristles which come off from the body, two on either side and four posteriorly. The female is much larger than the male (almost twice the size), and varies from $\frac{1}{4}$ ''' (.3022 mm.) to $\frac{1}{5}$ ''' (.4232 mm.) in length, and from $\frac{1}{8}$ ''' (.2645 mm.) to $\frac{1}{6}$ ''' (.3526 mm.) in breadth. The male in general structure differs but little from the female; the last pair of posterior legs, however, are provided with stalked suckers in the place of bristles as in the female; the organs of generation, moreover, are conspicuous. The young, or larvæ, of either sex, may be recognized by their possessing but two hind legs.*

The female finds her way by boring through the horny layer into the mucous layer of the epidermis, and, being impregnated, begins at once laying her eggs and at the same time making her burrow. A variable number of eggs are deposited, usually about a dozen, after which she perishes in the skin. They are oval, and average about $\frac{1}{12}$ ''' (.1763 mm.) in length. If a eunicleus be excised with a knife or scissors, and placed beneath a microscope, it will be found to contain the mite, with usually from ten to fifteen eggs arranged in a row, egg-shells, more or less broken, and small, roundish, dark-colored specks,—the excrement. The ova hatch out in eight or ten days. The female may be captured by puncturing the blind end of one of the longer burrows (at which end the mite will always be found, appearing as a whitish or dark point) with a pin. With a little practice, no difficulty will be experienced in securing the prize. Before the operation is attempted, however, care should be observed in ascertaining the exact seat of the mite.

Scabies must be viewed as an artificial inflammation of the skin. It is brought about by the peculiar ravages of the insect, together

* For a complete treatise on the anatomy of the sarcoptes scabiei, see the superb monograph of M. H. F. Fürstenberg, entitled "Die Krätzmilben der Menschen und Thiere, mit 15 lithographirten Tafeln, 10 Umrissfiguren und 3 Holzschnitten." Leipzig, 1861.

with the scratching on the part of the patient. The lesions produced, both primary and secondary, with the exception of the burrows, are very similar, from an anatomical point of view, to those encountered in certain of the varieties of eczema. The amount of cutaneous disturbance varies considerably; as a rule, it is marked, the degree of inflammation depending upon the duration of the disease, and, more particularly, upon the sensibility of the skin. With this latter point will rest not only the grade of inflammation, but also the amount of scratching. According as the skin is or is not sensitive will the disease prove comparatively light or severe in type. In cases where there is a predisposition to eczema, this disease will undoubtedly be called forth, complicating the original affection; such instances are sufficiently common in countries where scabies is of frequent occurrence.*

Diagnosis.—Bearing in mind the various points which denote the presence of the disease, the diagnosis, as a rule, is easy. At the same time it must not be forgotten that the affection is liable to be encountered in all stages, from the day of contagion to the period of its highest development, and that the symptoms vary greatly according to its age, the influences to which it has been exposed, and other circumstances. The presence of the burrow suffices for the diagnosis, and should be looked for as soon as the disease is suspected; but it is by no means always to be found. In the first stage typical burrows do not exist, for a certain length of time is required for the mite to produce them; after the disease has continued for some time they become, on the other hand, in a great measure obliterated by the scratching of the patient. Thus their demonstration often proves a matter of difficulty. Their remains, however, in old cases, may generally be noticed. The mite itself may usually be extracted with a pin from a recent vesicle or burrow; but failure in this direction should by no means carry weight in the diagnosis, for it requires sharp eyes and a certain amount of dexterity to capture the intruder, even when in full sight. The supposed burrows, moreover, may upon closer inspection prove to be but lines of abraded epidermis, more or less filled with extra-

* In this country it is rare to see true eczema caused by scabies. The affection, as a rule, disappears rapidly upon the employment of a suitable parasiticide.

neous matter. They are not always to be plainly seen. They are most numerous and marked where the skin is thin and protected from external influences. In the majority of cases they are to be detected only upon the sides of the fingers.

The region of the body affected must always point strongly to scabies. The hands, wrists, forearms, penis, the mammae and nipples in the female, the buttocks in both sexes, particularly in children, and the trunk, are all more or less involved. The face and scalp remain free, except in the case of infants. The multififormity of the eruption, moreover, where the disease is well developed, consisting of a generally inflamed surface, papules, vesicles, pustules, scratch marks, excoriations, crusts of blood and pus, should in itself lead to a suspicion of the disease, especially if it occur upon the parts specified. It may, indeed, usually be recognized by the general picture. A history of contagion, also, will often be furnished.

There are, nevertheless, several diseases with which it may be confounded. It is most liable to be mistaken for vesicular and pustular eczema. As has been already stated, the two diseases may exist together as a complication; but such an occurrence is rare. The presence of the mite, the burrows, the more or less discrete vesicles and pustules, with irregular dots or dotted lines in their roofs, the regions affected, the gradual accession in the severity of all the symptoms, the steady increase day by day of itching and consequent scratching, and, lastly, the proof of contagion, all speak strongly in favor of scabies and directly against eczema. The affection may be distinguished from pediculosis by the character of the anatomical lesions, as well as by the regions involved. Finally, it is to be remembered that scabies may exist intercurrently in connection with various skin diseases.

Treatment.—Once recognized, the disease is in most cases speedily cured. External means alone are required. Before prescribing, there are several points which should be taken into consideration. The age of the patient, whether an infant, child, or adult, is a matter of some importance in deciding upon the remedy to be used. The natural sensitiveness of the skin, whether delicate and fine or coarse and harsh, should also be determined. A knowledge of the duration of the affection, as well as of the amount of secondary disturbance in the form of excoriations,

crusts, and infiltration which may exist, is likewise important. The objects to be gained in the treatment are twofold, namely, the destruction of the parasite and at the same time relief to the inflamed skin. Ordinarily, the artificially disturbed tissues recuperate rapidly after the destruction of the mite, so that no special remedies are demanded for this condition. If eczema, however, exist in connection with the scabies, or if the case be a severe one of long duration, it may be weeks before complete recovery takes place.

Sulphur, in one form or another, is the remedy which may be relied upon. It is best employed as an ointment. The strength should vary with the case at hand, for if used too strong where there is a high degree of inflammation it acts also as an irritant to the skin. A drachm and a half or two drachms to the ounce will be found suitable for the majority of cases. Before applying the ointment, the patient should receive a thorough washing with soft soap and water, to be followed, if possible, by a warm bath. After this it should be firmly and slowly rubbed into every portion of the body (except the head in the case of an adult), special attention being devoted to the hands, fingers, and other parts usually the seat of the disease. About an ounce should be consumed for each application. The rubbings are to be repeated twice daily for three days, at the expiration of which time a bath with soap may be taken. The itching will usually abate considerably after the first day, although it will not cease entirely until some days have elapsed after the destruction of the parasites, owing to the general cutaneous inflammation and irritation which exist. The applications, therefore, are not to be persisted with because the itching continues, but should be stopped after the third day, at least until it can be ascertained whether or not the mites have been destroyed. Vlemineckx's solution may also be referred to as a useful remedy.

Balsam of Peru, in itself a parasiticide, may be advantageously combined with sulphur, constituting an excellent preparation for children, as in the following formula :

R Sulphuris Sublimati, ʒi;
Balsami Peruviani, ʒss;
Adipis, ʒi.
M. Ft. ungt.

Styrax, also a balsam, is likewise valuable. It is well spoken of by Anderson,* and is by him even preferred to sulphur, employed according to the appended prescription :

R Styracis Liquidī, ℥i;
 Adipis, ℥ii.
 Liquefac et cola.

It possesses the advantages of having a pleasant odor, of being clean, and, moreover, unirritating to the skin. Tar, oil of cade, sapo viridis, carbonate of potassium, lime, petroleum, the essential oils, and staphisagria, may all be employed, with or without sulphur, in various combinations. They constitute the principal ingredients of numerous well-known prescriptions, some of which have had considerable repute in the treatment of this disease. A few of these only need be referred to :

R Potassii Carbonatis, ℥i;
 Sulphuris Sublimati, ℥ii;
 Adipis, ℥iss.
 M. Ft. ungt.

This is Hardy's modification of Helmerich's ointment, and is the preparation used at the St. Louis Hospital, Paris. The patient is well rubbed with sapo viridis for half an hour, when he is placed in a warm bath and permitted to remain there another half-hour, after which the above ointment is thoroughly rubbed into the skin, and the cure thus completed. This course of treatment, though rapid and, as a rule, effectual, is at the same time somewhat irritating to the skin; it was first instituted by Hardy, and for a large hospital service fulfils its purpose.†

Wilkinson's ointment, as modified by Hebra, is a preparation much in vogue in the Vienna General Hospital; the following is the formula :

* Treatment of Diseases of the Skin. London, 1872.

† At the St. Louis Hospital, Paris, the number of scabies patients is very large: not infrequently as many as fifty cases per day apply for treatment. They are not admitted into the hospital, but receive the cure described in a department devoted to this purpose.

R Sulphuris Sublimati,
 Olei Cadini, āā ʒii;
 Cretæ Præparatæ, ʒiiss;
 Saponis Viridis,
 Adipis, āā ʒi.
 M. Ft. ungt.

Patients are rubbed morning and evening for two days, after which nothing is done for a week, when, for the first time, a warm bath is ordered, and the treatment concluded. The preparation, though efficacious, is by no means elegant, and is more suitable for hospital than for private practice.

The patient should always be cautioned concerning the contagious nature of the disease. It is advisable to wear the same underclothes during the treatment, and afterwards to have them boiled.

Prognosis.—This is always favorable, a week usually sufficing for the cure, where the disease is not of long standing. If marked secondary lesions exist, longer time may be necessary to restore the skin to health. Relapses occur only in cases where the treatment has been but imperfectly carried out, or where the individual has re-contracted the disease.

LEPTUS.—Two species of leptus which are known to attack man are described by Prof. Riley* as occurring in the United States, both of which are sufficiently common in our Southwestern States.

Leptus Americanus, or American Harvest Mite.—This is a minute, active, brick-red colored, elongate pyriform creature with six long legs, barely visible to the naked eye. It is found upon the scalp, in the axillæ, and on other parts of the body, and more frequently upon children than upon adults. It does not completely bury itself in the flesh, but insinuates the anterior portion of the body only beneath the skin, causing a small inflammatory papule.

Leptus Irritans, or Irritating Harvest Mite.†—This is the better known of the two, and differs from the preceding merely in having

* American Naturalist, vol. vii. p. 16.

† This is very closely allied to the species met with in various parts of Europe and known as leptus (or "acarus") autumnalis. It is also termed "harvest-bug" and "mower's mite." In France it is known as "rouget."

a roundish oval form. It gives rise to considerable annoyance, burying itself in the skin and causing irritation and inflammation characterized by papules, vesicles, and pustules. It attacks especially the ankles and legs. It is met with in the summer and autumn in corn-fields, upon low bushes, in the grass and weeds along the banks of rivers, and in swampy places. It is said to be very common along the Mississippi River. The little red mite encountered in the swamps and on the low ground of Pennsylvania, New Jersey, and Delaware, especially about blackberry bushes, is in all probability the same species. The disease is best treated with mild parasiticides, as, for example, a weak sulphur ointment, after the manner of scabies.

PULEX PENETRANS, RHINOCHOPRION PENETRANS, or SAND FLEA.—The sand flea (called also “chigoe,” “chigger,” and “jigger”) is a small, almost microscopic creature, similar in its general anatomy to the common flea. It possesses, however, a proboscis which is as long as its body. It perforates and burrows into the skin, and in the course of a few days produces a painful inflammation accompanied with swelling, large vesicles or pustules, and, at times, extensive ulceration. The impregnated female alone enters the skin and causes the mischief. It attacks the feet, and more particularly the toes, beneath and alongside of the nail, where the ova are deposited. It is met with in tropical countries, being common in the West Indies, and in Central and South America. It is also met with in our Southern States. The treatment consists in extracting the intruder, which comes away in the form of a sac or bag as large as a small pea, being in the abdomen enormously distended with ova. The various essential oils are used about the feet as a preventive against the attacks of the parasite.

FILARIA MEDINENSIS.—This parasite (known also as the “Guinea-worm” and “dracunculus”) is found only in tropical countries, and more particularly along the west coast of Africa, in Senegal and Guinea, and in Egypt, Persia, and India. In the central provinces of India, Dutt* reports the disease very common,

* Brit. Med. Jour., 1880; also New York Med. Rec., vol. ii., 1880.

one hundred and seventy-eight cases having been under his care from one village. It attacks the skin, giving rise to marked inflammation, which manifests itself in the form of a species of boil or painful tumor. The full-grown worm is about one-half or three-quarters of a line in thickness, and varies from several inches to three feet in length according to its age. It has a roundish flattened form, tapers at each end, and is of a milk-white color. The young worm, when of microscopic size, finds its way by boring into the skin and deeper tissues, and there takes up its habitat. It remains in the integument in, as it were, a latent state for a long period, usually months, during which time it grows to the size above indicated. Sooner or later local inflammation is set up in the form of a pointed tumor, accompanied by more or less swelling and pain, which breaks, showing the presence of the worm. One worm only is present in each tumor, although a number of them may infest different regions of the body at the same time. The lower extremities, especially the feet, are the parts generally attacked. The disease is usually contracted in swampy places and on low grounds. The treatment consists in extracting the worm inch by inch, from day to day, as soon as it makes its appearance at the surface of the skin, care being taken not to break the creature in the operation. In a case treated by Tilbury Fox with the internal administration of assafoetida in liberal doses, as proposed by Horton, the tumor being poulticed, in five days the worm had extruded itself to the extent of an inch and a half, and the following day was found lying in the poultice. It measured twenty-three and a half inches.*

CYSTICERCUS CELLULOSÆ.—Cases of cysticerci in the skin and subcutaneous tissues have been reported by Lewin,† Guttman,‡ and Schiff.§ The disease is characterized by more or less numerous tumors varying in size from a pea to a hazelnut, situated under rather than in the skin. They are rounded or ovalish, smooth, elastic, firm or even hard, and movable. New

* *Lancet*, March 8, 1879.

† *Charité Annalen*, 1877, p. 609. See also *Viertelj. für Derm. u. Syph.*, Jahrg. IV., Heft 4.

‡ *Berlin. Klin. Wochenschr.*, No. 26, 1877.

§ *Viertelj. für Derm. u. Syph.*, Jahrg. VI., p. 275, 1879.

tumors usually show themselves from time to time. They are not painful on pressure, but they may be somewhat so spontaneously. Having attained a certain size, they may remain unchanged for years. They may be mistaken for lipoma, carcinoma, or sarcoma; also for epithelial molluscum, sebaceous cyst, and especially syphilitic tumors. Microscopic examination reveals the presence of cysticerci.

ÆSTRUS, BRÉEZE, GAD, or BOT-FLY.—This parasite not infrequently attacks man in Central and South America, and is also met with elsewhere. The ova are deposited by the fly in the skin, and there form inflammatory, boil-like tumors or swellings, with a central point or aperture which discharges a sanious fluid. The disease may also take on a linear, tortuous, or serpiginous form. In the course of time the presence of the worm, grub, or bot is discovered, which may be squeezed out or extracted. The various exposed portions of the surface are liable to be attacked, particularly the neck, back, and extremities. Walker* describes a case, occurring in Shetland, in which the lower part of the back of a woman was the seat of the disease, which was characterized by a reddish, purplish, tortuous line, resembling an inflamed lymphatic vessel, from the inflamed end of which the grub, or so-called "warble," escaped through suppuration. According to Walker, the disease is not uncommon in Shetland, and is encountered invariably in women. McCalman† and W. G. Smith‡ also report similar cases in which dipterous larvæ were extracted. My own experience furnishes a like case to that of McCalman. The fly often deposits the ova unknown to the individual. There are several species of *Æstrus* which infest the human skin, of which *Æ. bovis* is the most common. There is probably no species *Æ. hominis*.

DEMODEX FOLLICULORUM.—This minute creature (also designated scatozoon, entozoon, acarus, and *Simonea, folliculorum*) inhabits the sebaceous follicles of healthy, normal skin, and con-

* Brit. Med. Jour., Feb. 12, 1870.

† Ibid., July 19, 1879.

‡ Ibid., Oct. 1, 1881.

sequently gives rise to no symptoms whatsoever of disease. According to Mégnin,* it forms the only genus of a family of demodicides. A single species only occurs upon man, those found upon the dog, cat, sheep, and other animals being distinct, and not transferable to the skin of man. It is microscopic, varying in length from $\frac{1}{12}$ ''' (.1763 mm.) to $\frac{1}{6}$ ''' (.3526 mm.), and



FIG. XII.—*DEMODEX FOLLICULORUM*. (300 Diameters.)
Ventral surface. (After Simon.)

has an elongated, rounded, worm-like form, made up of a head, a thorax, and a long abdomen. Other, shorter forms are also found. From the thorax come off eight, short, stout, conical legs, all of the same size. The larva has only six legs. The abdomen is usually from two to three times the length of the thorax, and tapers off to a rounded point. (See Fig. XII.)

The parasite exists in the sebaceous glands of the skin, in both sexes, especially about the face, nose, ears, back, and chest, and lives on sebaceous matter. It is said not to occur in infants. It is entirely inoffensive, and is met with in healthy skin quite as

* Jour. d'Anat., March, 1877.

often as in those cases where the sebaceous glandular system is markedly disturbed, as, for example, in acne or in comedo. All persons, however, do not seem to possess the creatures; they are more apt to be present in thick, greasy skins than in thin, dry skins. They occur as often, at least, as two or three times in ten persons. Two, three, or more of them often exist in one follicle. They are found embedded in the sebaceous matter, lying lengthwise with the follicle, with the head directed inwards. No difficulty is experienced in obtaining them from a likely subject. A prominent or patulous follicle or a comedo upon the nose or forehead may be squeezed out, and the contents placed on a glass slide with a drop of olive oil and covered with a thin glass, when, with a power of from one to three hundred diameters, one or more of them will be usually found. The parasite was discovered by Henle, in 1841, and also, at about the same time, by Gustav Simon, of Berlin.

PEDICULOSIS.

Syn., Phtheiriasis; Phthiriasis; Morbus Pedicularis; Pedicularia; Malis Pediculi; Lousiness; *Germ.*, Läusesucht; *Fr.*, Phthiriasé; *Maladie Pédi-culaire*.

PEDICULOSIS IS A CONTAGIOUS, ANIMAL PARASITIC AFFECTION, CHARACTERIZED BY THE PRESENCE OF PEDICULI, AND THE LESIONS WHICH THEY PRODUCE, TOGETHER WITH SCRATCH MARKS AND EXCORIATIONS.

Symptoms.—Three varieties of the disease are encountered, which are designated according to the names of the species of pediculi, or lice. The parasites (belonging to the class Insecta, order Hemiptera, and family Pediculidæ) are named *pediculus capitis*, *pediculus corporis*, and *pediculus pubis*, frequenting, respectively, the head, body, and pubes. Their ravages are often extensive. They always occasion more or less discomfort, and at times great distress. The symptoms to which they give rise are somewhat different, and hence call for separate consideration.

PEDICULOSIS CAPITIS.—This is due to the presence of the *pediculus capitis*, or head louse. (See Fig. XIII.) It is found upon the scalp, and, as a rule, only upon this region of the body; occasionally, however, in elderly, bedridden subjects, it is met with on

the general surface. It has an elongate ovalish shape, consisting of head, thorax, and abdomen, the latter of which is marked on each side with seven clearly defined, deep, angular notches, and a blackish linear margin. Six legs, similar in size and general features, strongly jointed, and armed with stout claws and hairs, come off from the thorax. The head is of a rounded acorn shape, and is furnished with two five-jointed antennæ, and a pair of large, black, prominent eyes. The creature has a grayish or ashy color. It varies in length from $\frac{2}{3}$ ''' (1.410 mm.) to $1\frac{1}{2}$ ''' (3.174 mm.),

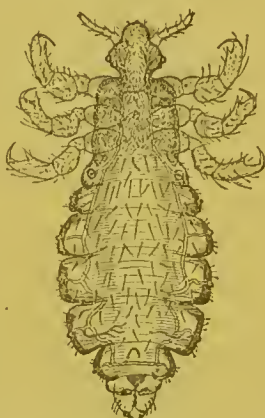


FIG. XIII.—*PEDICULUS CAPITIS*. (25 Diameters.)
Female. Dorsal surface.

the female being larger than the male. Upon the back of the male is seen a conspicuous and disproportionately large, conical or wedge-shaped structure, the penis. The ova, commonly termed "nits," are remarkably large (about a quarter of a line), pyriform or ovalish, whitish bodies, which are glued securely to the hairs. One, two, or more may be deposited on one hair. According to Küchenmeister,* the young are hatched forth in six days. The parasites may be present in small or in large numbers, according to the length of time the affection has existed and other circumstances. They are found upon all portions of the head, their favorite seats being the occipital region. They are met with either upon the surface of the scalp or upon the hair. The ova are found deposited along the shaft of the hair.

* The Animal and Vegetable Parasites of the Human Body, vol. ii. Syd. Soc. Trans. London, 1857.

Pediculi capitis are encountered for the most part in children; they are, however, also met with in adults, especially women. They are of not infrequent occurrence among the children of the poorer classes, especially in public schools. They attack the scalp and give rise to considerable irritation, itching, and consequent scratching, which is indulged in to such an extent that the scalp soon becomes wounded, and oozes a serous or purulent fluid mixed with blood, which in time mats the hair and forms into crusts. The state of the general health of the patient also influences the course of the affection, the parasites, as a rule, causing more mischief in those who are under bad hygienic influences, improperly cared for, and ill nourished, than in the healthy. In those predisposed to eczema the scalp will, in most cases, show marked symptoms of eczema. Together with the pediculi are found the ova, or nits, large numbers of which may usually be seen throughout the hair, at a distance sometimes resembling the scales of dry seborrhœa. They may generally be found in numbers even where the pediculi are few. Where the affection has existed for some time, the head usually presents a disgusting appearance, and has a nauseous odor. The itching in time becomes intolerable; sleep is interfered with, the mind harassed, and the general health, it may be, more or less disturbed.

PEDICULOSIS CORPORIS.—The parasite here is the *pediculus corporis*, or body louse (termed also, more properly, the *pediculus vestimenti*, or clothes louse). (See Fig. XIV.) As regards its anatomical structure, it is very similar to the *pediculus capitis*, although it is considerably larger; it varies in length from $\frac{3}{4}$ " (1.157 mm.) to 2" (4.232 mm.). The female is larger than the male. It has an elongate, ovalish shape, with seven well-marked indentations on each side of the abdomen, which are less angular and more rounded than in the case of the *pediculus capitis*. The abdomen of the female is broader than that of the male, is more deeply notched upon the sides, and possesses a triangular-shaped notch at the end. The penis in the male is a remarkably large, wedge-shaped structure, situated on the back, and rising from the posterior portion of the middle of the abdomen. From the thorax spring the legs, three on either side, which are long, jointed, and provided with heavy claws and numerous small hairs. The head protrudes, is of a rounded acorn shape, and is armed with two

hairy, five-jointed antennæ, and prominent eyes. The color of the louse, when devoid of blood, is dirty-white, ashy, or grayish, with a dark line around the margin of the abdomen. Its habitat is the

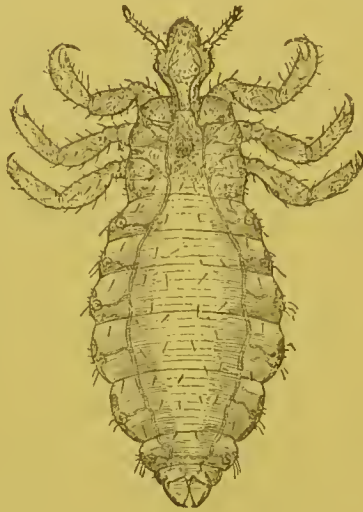


FIG. XIV.—*PEDICULUS CORPORIS*. (25 Diameters.)
Female. Dorsal surface.

clothes covering the general surface; it lives in the garments, remaining upon the skin only long enough to obtain sustenance. The ova are deposited in the clothing, usually in the seams, the lice being hatched at the end of five or six days. They reproduce at the end of eighteen days. Læwenhoek, who carefully studied their habits, made the calculation that two females might become the grandmothers of ten thousand lice in eight weeks. Where they are present in large numbers, some few may usually be observed upon the skin, either crawling about or in the act of drawing blood; the majority, however, will be found upon the clothes, especially about the folds and seams of the undergarments. As they move about over the surface or attack the skin, they give rise to intensely disagreeable, itching sensations. The patient scratches, but obtains no permanent relief; as the parasites multiply, the itching becomes so violent that the distress is almost unendurable. The scratching is generally severe, and is productive of scratch lines and marks, excoriations, blood crusts, pigmentation, thickening of the skin, and pustules with inflammatory bases and more or less crusting.

The lesions are characteristic. They are peculiar in being multifiform; the scratch marks are here and there long and streaked, in other places short and jagged; the excoriations and blood crusts are of all sizes, from a pin-head to a split pea and larger, and the pustules irregular in outline. They vary in severity with the duration of the affection and the general condition of the patient. Upon close inspection, in addition to the scratch marks and other secondary symptoms are seen the primary lesions, consisting of minute reddish puncta with slight areolæ, the points at which the parasite has drawn blood. The chief seats of the lesions are the back, especially about the scapular region, the chest, abdomen, hips, and thighs. Where the affection has existed for months or years, as at times happens, a brownish pigmentation of the whole skin may take place, the result of long-continued irritation and scratching. Pediculosis corporis is encountered for the most part in the middle-aged and elderly, although none are exempt from its invasion. Children, however, are very seldom attacked. The complaint is a common one among the poorer classes of all countries, but is far less frequent in this country than abroad. In Philadelphia it is comparatively rare.

PEDICULOSIS PUBIS.—The pediculus pubis, or crab louse (known also as phthirius inguinalis, phthirius pubis, and morpion), although having its seat of predilection about the pubes, may also infest the axillæ, sternal region in the male, beard,

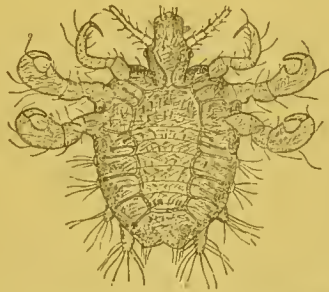


FIG. XV.—*PEDICULUS PUBIS*. (25 Diameters.)

Female. Dorsal surface.

eyebrows, and even eyelashes. (See Fig. XV.) It is smaller than either the head louse or the body louse, measuring from $\frac{1}{2}$ ''' (1.058 mm.) to 1''' (2.116 mm.). It has a short, broad, flat,

roundish, or shield-shaped form, with a large, fiddle-shaped head, with two stout, five-jointed antennæ, and a pair of small, rather inconspicuous eyes. The thorax is short and passes imperceptibly into the abdomen; from the sides of the thorax come off six jointed, hairy legs provided with powerful claws; the first pair are light, the second and third pair thick and heavy. The margin of the abdomen is slightly indented, and armed with eight stout, conical or teat-shaped, prehensile feet, each with from four to ten bristles. The creature has a yellowish-gray color, and is more or less transparent. The female is larger than the male, and has a triangular-shaped notch at the termination of the abdomen.

They may be found either crawling about the hairs or adhering closely to the surface of the skin. By means of the legs and bristles they cling with remarkable tenacity to the parts with which they may be in contact. The ova are small, whitish or yellowish bodies, and are found glued to the hairs, as in the case of those of the *pediculus capitis*. Here and there upon the skin, especially about the roots of the hairs, minute reddish particles may be seen, being the excrement of the parasite. They infest adults chiefly, and occasion symptoms similar to those described in connection with the other species. They are usually contracted through sexual intercourse; at the same time, it must be stated, cases occasionally present themselves in which they have not been got in this way, and where, singularly enough, no explanation as to the mode of contagion can be suggested. The amount of irritation to the skin which they produce varies; at times it is severe, in other cases it is comparatively insignificant.

Etiology.—The cause of pediculosis is always to be found in the presence of the parasites. All individuals, the robust as well as the weakly, are equally liable to be attacked. As in scabies, contagion, direct or indirect, is the only possible source from which the disorder may be contracted.* In this connection the primary lesion produced by the parasite, as well as the secondary lesions,

* Views such as have from time to time been suggested, pointing to the "spontaneous generation" of pediculi, as well as to their having originated within the skin or other tissues of the body, it need scarcely be remarked, are without foundation.

may be briefly referred to. Considerable attention has been devoted to the minute anatomy of the head of the pediculus corporis by Landois* and Schiödte.† The latter of these investigators, whose studies are the more recent, has arrived at the conclusion that pediculi are provided with a sucking apparatus, or haustellum, as originally suggested by Swammerdam, and not with a mouth and mandibles, as has been commonly supposed. Such being the anatomy, it is obvious that the pediculus does not bite, but, inserting the haustellum into a follicle, obtains blood by a process of sucking, producing a lesion which must be regarded in the light of a minute hemorrhage. This view is entertained also by Tilbury Fox‡ and others, and is without doubt correct. The secondary lesions are usually conspicuous, and are the effects of scratching upon the skin. The longer the affection has existed, and the more numerous the pediculi are, the more marked will these lesions be. The attacks of the parasite, especially in the case of pediculi capitis and corporis, bring about a peculiarly irritable state of the skin which gives rise to an irresistible desire to scratch. As a consequence, the act is indulged in, at first to a slight extent, but later to an inordinate degree, so that in the course of a few weeks the surface is, as a rule, markedly excoriated and lacerated. In certain subjects, in addition to the excoriations, ecthymatous pustules are produced. The amount of pigmentation varies with the duration of the affection, and with other circumstances.

Diagnosis.—The pediculi may always be found, if sufficient care be taken to discover them. Frequently they are few, when considerable research and close observation may be required for their detection. When violent itching exists in any case without marked eruption, the possibility of their presence should always be entertained and an investigation made.

Pediculosis Capitis.—They are less liable to escape notice here than upon other regions of the body. The ova, or nits, which may be recognized even at a distance, serve as a diagnostic mark.

* Zeitschrift für Wissenschaftliche Zoologie, Bd. xiv. and xv.

† Naturhistorisk Tidsskrift, Ser. 3, vol. iii., Copenhagen, 1864-65; for translation, see Annals and Magazine of Natural History, Ser. 3, vol. xvii., 1866.

‡ Loc. cit., p. 413.

The occipital region of the head especially is always more or less invaded, and by separating the hairs here they may generally be seen without further search, together with scratch marks, serous or bloody oozing, matting of the hair, and crusts. The affection is often mistaken for vesicular or pustular *eczema*. In this connection it is not to be forgotten that *eczema* is not infrequently complicated with *pediculosis*, and is to be explained in one of two ways; either the parasites have brought about the *eczema*, or, on the other hand, they have been contracted after the *eczema*, the diseased scalp constituting a favorable abode for them: the former course, however, is the more usual. In either case it is important to arrive at a conclusion as to the primary affection.

Pediculosis Corporis.—*Pediculi* of the body often escape detection for the reason that their presence is not suspected. As already stated, their habitat is in the clothing, and it is therefore to the undergarments that attention should be directed in looking for them. The seams and folds, especially of the undershirts and drawers, are to be examined, for it is here that they will generally be found. The extensive excoriations and blood crusts upon the shoulders and back, and the streaks of the finger-nails upon various regions, will also aid in the diagnosis; they are, indeed, in severe cases characteristic. The minute, reddish, hemorrhagic spots, indicating the points where the parasites have drawn blood, may also be recognized. *Pediculosis* of the body has long been seriously confounded with two very different diseases, namely, *prurigo* and *pruritus*. (See these diseases.) Suffice it to say that an error in diagnosis cannot take place if the symptoms of the diseases in question be borne in mind. The symptoms of scabies are so different from those of *pediculosis* as to call for no remark.

Pediculosis Pubis.—Itching about the genitalia in either sex should always lead to a careful examination of the parts. The diagnosis will in all probability be one of three diseases, namely, *eczema*, *pruritus*, or *pediculosis*. The *pediculi* of this region, on account of their transparency and flatness, are at times difficult of recognition; they moreover generally adhere closely to the roots of the hairs and to the skin, when they present an appearance not unlike freckles or dirt specks. The excrement of the parasite will be found here and there about the roots of the hairs and on the skin, in the form of minute reddish particles. The ova are readily

seen as small, whitish, or yellowish bodies, glued to the hairs. It will also be remembered that pediculi pubis not infrequently infest the axillæ. Existing in either region they usually give rise to more or less irritation and annoyance, especially at night; at times, however, they cause remarkably little cutaneous disturbance and discomfort.

Treatment.—This is simple, the main object being the destruction of the parasites and their ova. The secondary lesions seldom demand attention, for, as a rule, they disappear without special treatment. The various remedies used comprise the mercurial preparations, staphisagria (seeds of *Delphinium staphisagria*), pyrethrum (flowers of *Pyrethrum carneum* and *P. roseum*), sulphur, sabadilla, coccus Indicus, tobacco, carbolic acid, and petroleum. They are employed in the form of ointment, powder, or lotion, as may be deemed most desirable. It need scarcely be added that strict regard to cleanliness, both of the person and with reference to the clothing and the toilet, should be enjoined.

Pediculosis Capitis.—One of several plans may be employed. The head may be well saturated with petroleum, enough being used to bathe the scalp, after which a bandage should be applied and the dressing kept on through the night. In the morning the head should be washed with hot water and soft soap. Where the parasites have not been completely destroyed, the petroleum should be again applied in the same manner. One or two thorough applications suffice. Care should be observed to prevent the oil from trickling down the neck. Decoction or tincture of coccus Indicus is also a reliable remedy. Where there is not much excoriation of the skin, a lotion of corrosive sublimate, from two to five grains to the ounce of water, or with alcohol and one of the essential oils, is a cleanly and efficacious mode of treatment. Ointments are not so advantageously employed as lotions, on account of their liability to mat the hair; nevertheless, where the excoriations are extensive, or where eczema is present, they may often be applied with benefit. White precipitate, from twenty to sixty grains to the ounce, in these cases will be found useful. Ointments of sabadilla or staphisagria may also be used. The nits are to be removed by repeated washings with alkaline or acid lotions. Soda or borax washes, soft soap, vinegar, dilute acetic

acid, and alcohol, will all prove of service in getting rid of these annoying little bodies. It is seldom, if ever, necessary to cut the hair. In children, where the ova exist in numbers, there is no reason why the hair should not be cut; but in women with long hair the operation is unwarrantable. With patience and time there is no difficulty in relieving the hair of them.

Pediculosis Corporis.—In pediculi of the body the first and all-important step to be taken is to provide for the clothes, which always contain both the parasites and their ova. It is, indeed, the clothes (including all the wearing-apparel of the individual), rather than the skin, that require treatment. Unless these can be changed and cared for, no satisfactory result need be looked for. They are to be either boiled or baked at a temperature sufficiently high to destroy life. In cases where it is impossible for the patient to have the clothes attended to immediately, an ointment of powdered fresh staphisagria, two drachms to the ounce, applied freely to the skin, has the effect of causing the parasites to disappear. The ointment should be made by digesting the powder in hot lard and straining. Baths of hot water and soap, and of bicarbonate of sodium, four or six ounces to the bath, are also useful in relieving the excoriations, as well as the itching, which is apt to continue after the parasites have been destroyed. Lotions of carbolic acid, from one to three drachms to the pint of water with half an ounce of glycerine, will also be found useful in allaying the irritability of the skin. But, to repeat, it is to the clothes that the attention should be devoted. The undergarments should in all cases be changed frequently for the first few days, and immediately boiled. They should be carefully examined from time to time, and if a single pediculus be found they should be submitted again to treatment: unless these precautions receive attention the parasites are very apt to reappear. The lack of scrutiny upon this point will account for the cases of chronic pediculosis of the body, occasionally encountered, who wander about laboring under the impression that they never can be permanently relieved. Patients should be informed as to the nature of their affection, and assured further that by heed to the treatment a short time will suffice for complete relief.

Pediculosis Pubis.—Any of the ointments or lotions already spoken of may be used. The tincture of *coenulus Indicus*, full

strength or diluted, and corrosive sublimate lotion, will be found clean and effectual remedies. Infusion of tobacco will also answer the purpose. The parts should be washed twice daily with soft soap and water, and the remedy applied for some days after the pediculi have been destroyed, to insure complete destruction of the ova. White precipitate ointment and mercurial ointment are well-known and effectual remedies which may be mentioned.

Prognosis.—After the remarks which have been made, little need be said concerning the termination of the disease. It is always satisfactory, provided the patient is able to follow the instructions. It is here that the difficulty at times arises in relieving certain cases, circumstances not permitting of the treatment. Instances of pediculophobia are occasionally encountered, sometimes among intelligent persons, who though cured believe that they still have the disease; others, perhaps the victims of pruritus, imagine themselves infested by pediculi.*

CIMEX LECTULARIUS, ACANTHIA LECTULARIA, or COMMON BED-BUG.—This insect is not infrequently the cause of mischief upon the skin. It is found in beds, about the joints, grooves, and crevices, and in the bedding and bedclothes, about the seams and folds; also in the cracks of old floors and walls, wall-paper, and furniture, and in other like places. It lives upon human blood. It is very tenacious of life, and is said to be able to live without food for a very long period. It possesses a strong and offensive, cinnamon-like odor, which is particularly noticeable when it is crushed. It exists almost universally, although, according to Küchenmeister, it is not found in South America, Australia, or the Polynesian islands. The cutaneous lesion which it produces is of the nature of an urticarial wheal, consisting of a circumscribed, slightly raised, split-pea sized, erythematous spot with a whitish centre, and at times attended with considerable swelling. The lesion is a hemorrhage, which remains as a reddish point after the wheal has subsided. The sensation accompanying

* Pigeon, or hen, lice (*Dermanyssus avium*) may also occasionally infest the human skin, as in the case of a woman reported by Dr. Goldsmith, where they resided in the sweat pores, but were made to appear on the surface by induced excessive sweating. Other cases are also referred to. (New York Med. Rec., Oct. 29, 1881.)

the act of drawing blood is that of a very slight prick, followed in a few minutes by decided itching and burning almost identical with that of urticaria. Scratching usually takes place, followed at times, especially in children, by excoriations.

Among the lower classes in overcrowded, old frame houses, these pests often exist in great numbers and at times occasion considerable suffering, especially in children. The bed-bug is said to have a foe in the cockroach; also, according to Prof. Riley,* in the "two-spotted corsair" (*Pirates biguttatus*) met with in beds infested with bed-bugs in southern Illinois, and in Louisiana, Texas, California, and Mexico. According to the same authority, the "blood-sucking cone-nose," or "big bed-bug" (*Conorhinus sanguisuga*), has been found in beds in southern Illinois and Ohio, but it probably does not occur farther north. This species is said to produce lesions followed by severe inflammation of the skin. The bites of the bed-bug may be relieved by lotions containing alcohol, carbolic acid, vinegar, dilute acetic acid, corrosive sublimate, lead-water, water of ammonia, and similar remedies, sponged upon the parts. The best preventives against bugs in beds and other haunts are corrosive sublimate and pyrethrum powder.

PULEX IRRITANS, or COMMON FLEA.—This little pest is found universally, especially in hot and warm climates. Although it provokes no serious cutaneous disturbance, it is nevertheless, in certain parts of the world, especially in tropical countries, the source of considerable discomfort to man. The lesion which it produces is an erythematous spot with a minute, central, darker, hemorrhagic point. Flea-bites may be mistaken for purpura simplex; the areola with which the central point of the bite is surrounded will, however, suffice to establish the diagnosis.

CULEX, GNAT, or MOSQUITO.—According to Packard, the typical species of the genus *Culex*, to which the mosquito belongs, is *Culex Pipiens*. Over thirty North American species of this genus have been described in various works. The mosquito is common to almost every section of our country, and is not infrequently the source of considerable irritation upon the skin, causing wheals,

* American Entomologist, vol. i. p. 85.

varying in their features with the sensitiveness of the skin. The itchiness of the lesion is best relieved with ammonia-water. The midge and black fly of the Northern States and Canada (both species of *Simulium*) also give rise to annoyance during the early summer months, occasioning lesions similar to those of the mosquito.

IXODES, or WOOD-TICK.—Ticks belong to the order Acarina. They are described by Packard* as being “mites of gigantic size with bodies of a leathery consistence. The mandibles are saw-like, being covered towards the end with teeth, with from two to four terminal hooks, and, with the large spatulate, dentate ‘glossoide’ of the maxillæ, form a beak which the tick pushes into the skin of its host.” There are several species met with in our woods which are liable to attach themselves to the human skin. Packard describes *Ixodes unipunctata*, which has been found on man in Pennsylvania and in Massachusetts. The common cattle tick, *Ixodes bovis*, met with in the Western States and in Central America, according to the same authority, is allied to the European *Ixodes ricinus*. They insert their proboscis and head deeply into the tissues, and suck blood until they not infrequently swell up to many times their natural size. They should never be extracted with violence, but should be induced to relinquish their firm hold upon the skin by dropping upon them some oily substance, as olive oil or one of the essential oils.

* Guide to the Study of Insects, New York, 1878.

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By LOUIS A. DUHRING, M.D.,

Professor of Skin Diseases in the Hospital of the University of Pennsylvania; Dermatologist to the Philadelphia Hospital; Consulting Physician to the Dispensary for Skin Diseases, Philadelphia; Author of "Diseases of the Skin," etc.

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